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HEALTH RISK PREVALENCE:

A Report Card For



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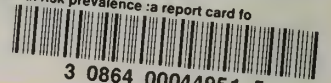
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HEALTH RISK PREVALENCE:
A REPORT CARD FOR MONTANA

A 1982 STATEWIDE ANALYSIS OF SELECTED HEALTH RISK FACTORS

BY

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MONTANA HEALTH EDUCATION/RISK REDUCTION PROJECT
DIVISION OF HEALTH SERVICES & MEDICAL FACILITIES
MONTANA DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

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"The health of the American people has never been better... further improvements...can and will be achieved...not alone through increased medical care and greater health expenditures...but through a renewed national commitment to efforts designed to prevent disease & promote health."

Healthy People

The Surgeon General's report
on health promotion and
disease prevention,
U.S. Dept. of Health,
Education and Welfare, 1979

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Preface

Preface

INTRODUCTION

The pattern of our daily lives heavily influences our health and how long we live. It can effectively be argued, therefore, that the overall well-being and longevity of the American people, as well as the cost of health care itself, will be significantly dependent on our ability to affect change in American behavior and lifestyles. Clinical research, for instance, has identified several choices of lifestyle as risk factors for serious illness. Determining the prevalence of such behaviors may therefore assist in allocating resources for primary disease prevention. This health risk prevalence study profiles the health-related habits of adult Montana residents through the analysis of data from a random state-wide health interview survey. Our analysis will concentrate on eight basic lifestyle factors: smoking, exercise, high blood pressure, stress, nutrition, drinking (alcohol), diabetes, and general health and safety.

RATIONALE

Lifestyles may ultimately account for over half the annual deaths in the United States.¹ In a recent report issued by the Institute of Medicine, National Academy of Sciences, for example, as much as 50 percent of mortality from the ten leading causes of death in the United States could be traced to lifestyle.^{2,3} Experts claim that impressive changes have occurred in the lifestyles of many individuals in the last ten years which should facilitate further efforts toward prevention. For instance, a reduction of cardiovascular and cerebrovascular mortality has occurred in the United States during the last decade.

¹United States Gov't, Dept. of Health & Human Services, Ten leading causes of death in the United States, 1977.

²Institute of Medicine, National Academy of Sciences, Health & Behavior, National Academy Press

³The report calls for a stepping up of research on the relationship of behavioral factors to health & disease and a reordering of research interests aimed at fostering prevention and promoting health.

In explaining this phenomenon it has been pointed out that:

- .per capita use of tobacco is decreasing
- .lesser amounts of saturated fats are being consumed
- .more people are controlling their blood pressure
- .more people are exercising¹

All of these indicators strongly suggest that a widespread change away from harmful lifestyles has begun in the United States. However, as was stated in a New England Journal of Medicine editorial, "overinterpretation of this temporal relationship would be folly at present since many other risk factors, environmental conditions, and treatment approaches have changed."¹

Moreover, since many of the leading causes of death are chronic and disabling pointing toward lifestyle implications, measures such as prevalence should be taken into account in order to more accurately assess the role lifestyle plays in disease manifestation.² Changes in lifestyle, i.e., health risk behaviors, must be monitored to document their effect on morbidity and mortality patterns and to identify harmful health behaviors in specific populations that could be improved to reduce the incidence and prevalence of premature death and disability.³ Substantiation of the effects of lifestyles is a necessary prerequisite to investing in lifestyle changing promotion programs with complete confidence. New research on the nature of risk factors might also include:

- .identifying lifestyle and other risk factors for diseases we do not yet know how to prevent;
- .establishing the strength of suspected but unproven lifestyle risk factors such as possible associations between diet & cancer, and between lack of exercise & stroke;
- .determining the impact and interaction of established risk factors on populations of different age, sex & ethnic backgrounds;
- .learning more about lifestyles & genetic endowments that appear to bolster people's natural defenses against disease.⁴

¹New England Journal of Medicine, Vol. 300, March 1979, p. 490.

²Institute of Medicine, National Academy of Sciences, Health & Behavior, National Academy Press.

³Colorado Adult Population Survey: Health Risk Prevalence, Colorado Dept. of Health, March, 1981, p. 1.

⁴Baller, Katherine G., Improving the Chances for Health: Life-Style Change & Health Evaluation, Nat'l Center Health Education, 1980.

Statistics about morbidity and mortality have been collected by a variety of agencies for a long period of time, and are readily available. However, both on the national and state levels, there has been a serious lack of comparable data on lifestyle habits which affect health. The behavior, habits, and addictions of the American people can best be influenced and modified by those with a clear and accurate picture of the numbers and types of people who smoke, are overweight, fail to exercise, eat the wrong foods, and so on. It is the purpose of this report to provide that and similar health risk prevalence information on the people of Montana.

GOALS

During the late 1970's, the Health Education/Risk Reduction Grant Program of the Centers for Disease Control (CDC) established risk reduction programs nationwide in order to meet three national goals:¹

- .to increase the awareness in the general population of the health hazards of smoking, alcohol abuse, obesity, stress and hypertension, as well as other risk factors relating to preventable health conditions and diseases;
- .to provide high risk groups, such as adolescents, pregnant women, the elderly, poor, and minority populations with the opportunity to make informed, responsible decisions that will affect their health;
- .to reduce the incidence and prevalence of risk factors and to bring about a measurable reduction in premature death and disability.

One major objective of this grant program has been to establish baseline data on the prevalence of lifestyle risks. The project is designed to develop, stimulate and coordinate health education programs aimed at reducing the major risk factors to American health. As determined by CDC, the risk factors are: smoking, stress, hypertension, alcohol abuse, obesity, lack of exercise, and accidents.

In June, 1979, the Preventive Health Services Bureau of the Montana Department of Health & Environmental Sciences received a grant from CDC to begin a Health Education/Risk Reduction (HERR) Program in Montana. The purpose of the program was in line with national goals and would be met through a health-interview survey of adult Montanans.

¹"Program Guide, HE/RR Grant Program," Dept. of Health & Human Services, PHS, CDC, Bureau of Health Education, p. 1.

Prior to the 1981 survey, no data had been collected on the prevalence rates of CDC's listing of risk factors. Much of the data that had been used for health planning purposes were synthetic estimates. Thus, funding from this grant provided the impetus for data that had been long sought after. A representative statewide survey of Montana would provide actual data on the self-perceived risk-taking behavior of adults in the state. This would enable health and social agencies to better plan intervention programs aimed at reducing these risks. The data from Montana could also be used to compare Montana's reported risk behavior with national statistics and with other states that have also conducted similar risk factor prevalence surveys.

A review of existing data sources and pertinent literature currently available revealed that the information needed to meet the health risk factor data collection guideline of the HERR grant did not exist. The information that was available did not address the suggested variables to be collected as outlined in the HERR grant was limited to specific populations and/or was not suitable for comparison and/or aggregation with data being gathered in other states and geographical areas. It was also determined that there existed no widely accepted, standardized means for determining the prevalence of risk factors related to preventable health conditions.

Given the limitations of available health risk data, professional contacts were made by the Montana Department of Health and Environmental Sciences in order to solicit the most appropriate methods for the collection of health risk information.

Montana's HERR health-interview survey was conducted and managed during the months of October/November, 1981, by Smouse Research Associates of Bozeman, Montana, using the services of Montana Surveys, Interviews and Research of Great Falls, Montana. The results of the survey provide a behavior-lifestyle view of selected risk factor prevalences in Montana as of late 1981. Generally, the Montana HERR survey was envisioned to serve the following purposes:

- .to collect descriptive statistics on the prevalence of smoking, alcohol abuse, obesity, hypertension, stress, and other preventable health conditions and chronic diseases (exercise and accident prevention and injury control) cited in the HERR grant guidelines in a statewide random survey of non-institutionalized Montana adults (age 18 and over);

- .to compile baseline data for subsequent comparisons on demographic, epidemiological, and behavioral variables;
- .to develop a standardized health risk prevalence methodology and expertise for use in local community prevalence surveys in Montana;
- .to report these findings and their implications for use in health risk reduction planning by potential users of these data, particularly policy makers, public health departments, voluntary health agencies, and health professionals.

The resulting report will be used to educate the public and health professionals of Montana to the current status of selected health risk factors and to target areas for possible health education planning emphasis by the state of Montana. The data collected were not meant to infer "cause and effect," but when utilized in relation to similar data from other states, trends can be established which can help specify areas where risk reduction/disease prevention efforts can be prioritized.

This document is designed for the use of leadership in the wide range of private and public sector organizations with important roles in these various areas. At a time when budgets become ever tighter, legislators, public officials and governing boards of industry, foundations, universities and voluntary agencies are beginning to re-examine their traditional bases for allocating their limited health-related resources. It is anticipated that in the years to come policy makers will be able to use the objectives in this report to track the state's successes or failures in prevention. This method is a first step toward planning and developing methods aimed at producing relevant health statistics on the state level.

SURVEY CHARACTERISTICS¹

General sample characteristics of the HERR survey:

TABLE A: SEX

| | Males | Females | Total |
|---------|-------|---------|-------|
| Number | 183 | 317 | 500 |
| Percent | 37 | 63 | 100 |

¹Throughout this report, numbers have been rounded to aid in statistical simplification, columns/rows will not always add to 100%.

TABLE B: AGE

| | Males % | Females % | Total % |
|-------|------------|--------------|------------|
| 18-34 | 40 | 35 | 37 |
| 35-54 | 30 | 33 | 32 |
| 55+ | 29 | 32 | 31 |

TABLE C: REGION OF RESIDENCE

| | Males % | Females % | Total % |
|-----|------------|--------------|------------|
| I | 13 | 13 | 13 |
| II | 13 | 20 | 18 |
| III | 24 | 18 | 20 |
| IV | 20 | 26 | 24 |
| V | 31 | 23 | 26 |

TABLE D: EDUCATION

| | Males % | Females % | Total % |
|--------------------------|------------|--------------|------------|
| Less than high school | 20 | 13 | 16 |
| High school graduate | 41 | 39 | 40 |
| Some college | 19 | 26 | 24 |
| College grad | 20 | 22 | 21 |

TABLE E: MARITAL STATUS

| | Males % | Females % | Total % |
|---------------|------------|--------------|------------|
| Never married | 20 | 9 | 13 |
| Married | 68 | 70 | 70 |
| Separated | 2 | 1 | 1 |
| Divorced | 9 | 6 | 7 |
| Widowed | 2 | 14 | 9 |

TABLE F: ETHNIC BACKGROUND

| | Males % | Females % | Total % |
|------------------|------------|--------------|------------|
| White | 98 | 97 | 98 |
| Native American | 1 | 1 | 1 |
| Black | <1 | <1 | <1 |
| Spanish American | <1 | <1 | <1 |
| Other | 0 | 0 | 0 |

TABLE G: RELIGIOUS PREFERENCE

| | Males % | Females % | Total % |
|--------------------------|------------|--------------|------------|
| Protestant | 55 | 62 | 60 |
| Catholic | 21 | 21 | 21 |
| Jewish | 1 | 1 | 1 |
| Mormon | 5 | 2 | 3 |
| Unitarian | 0 | 1 | 1 |
| Seventh Day Adventist | 0 | <1 | <1 |
| Other | 3 | 4 | 4 |
| No preference | 15 | 8 | 11 |

TABLE H: EMPLOYMENT STATUS

| | Males % | Females % | Total % |
|------------|------------|--------------|------------|
| Employed | 67 | 40 | 50 |
| Unemployed | 8 | 5 | 6 |
| Homemaker | 0 | 36 | 23 |
| Retired | 22 | 16 | 18 |
| Student | 3 | 4 | 3 |

TABLE I: FAMILY INCOME

| | Males % | Females % | Total % |
|-------------------|------------|--------------|------------|
| \$0-\$9,999 | 19 | 29 | 25 |
| \$10,000-\$19,999 | 40 | 37 | 38 |
| \$20,000-\$34,999 | 28 | 23 | 25 |
| \$35,000+ | 14 | 11 | 12 |

TABLE J: HOUSEHOLD SIZE (18 years and older)

| | Males % | Females % | Total % |
|---|------------|--------------|------------|
| 1 | 25 | 22 | 23 |
| 2 | 68 | 67 | 67 |
| 3 | 6 | 9 | 8 |
| 4 | 2 | 2 | 2 |
| 5 | 0 | 1 | 1 |

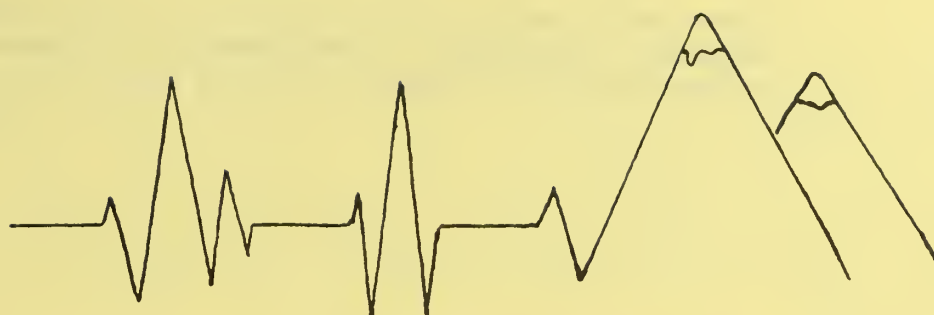
Table K reflects the basic demographic characteristics of the HERR survey sample population compared to 1980 data from the Montana census, available from the Montana Department of Administration, Research & Statistical Services Bureau. The HERR survey sample overrepresents the White race by 3.3% (in Montana, Native Americans are the largest non-white population). The average household size is comparatively similar. The sample underrepresented the never married populace and overrepresented the married and widowed group. Other characteristics of marital status were quite similar. The median household income was somewhat higher in the survey than compared to the Montana census by \$582. The income of less than \$5,000 was underrepresented by 4.4% and the \$10,000-\$15,000 and \$15,000-\$20,000 groups were overrepresented by approximately 4% each. The educational level is quite comparable to the 1980 Montana census. The HERR survey sample appears to represent a fair estimate of the state's adult population. The survey of 500 Montanans, aged 18 years and older, was expected to give acceptable sampling error units for the wide range of questions to be asked.

TABLE K: DEMOGRAPHIC CHARACTERISTICS OF THE HERR SAMPLE
IN COMPARISON WITH SIMILAR DATA REPORTED IN THE
1980 MONTANA CENSUS

| <u>CHARACTERISTIC</u> | <u>HERR SURVEY</u> | <u>1980 MT. CENSUS</u> |
|--|--------------------|------------------------|
| <u>Race</u> | | |
| White | 97% | 94% |
| Non-White | 3% | 6% |
| <u>Household Size (Average)</u> (18+ years old) | 1.90 | 1.95 |
| <u>Marital Status</u> | | |
| Never Married | 13% | 19% |
| Married | 70% | 66% |
| Separated | 1% | 1% |
| Divorced | 7% | 7% |
| Widowed | 9% | 7% |

TABLE K: (continued)

| <u>CHARACTERISTIC</u> | <u>HERR SURVEY</u> | <u>1980 MT. CENSUS</u> |
|-------------------------|--------------------|------------------------|
| <u>Household Income</u> | | |
| Median | \$16,306 | \$15,724 |
| Less than \$5,000 | 9% | 13% |
| \$5,000-\$10,000 | 16% | 18% |
| \$10,000-\$15,000 | 20% | 17% |
| \$15,000-\$20,000 | 18% | 15% |
| \$20,000-\$25,000 | 12% | 13% |
| \$25,000-\$35,000 | 12% | 14% |
| \$35,000-\$50,000 | 9% | 7% |
| \$50,000+ | 3% | 3% |
| <u>Education</u> | | |
| Less than high school | 16% | 13% |
| High school graduate | 40% | 38% |
| Some college | 24% | 20% |
| College graduate | 21% | 17% |



Summary and Highlights

Summary and Highlights

Many of the findings are not covered at all in this brief summary for each risk factor. It is hoped that all those with a serious interest in this study will not limit themselves to just reading this one section.

SMOKING

Although smoking has been on the decline, approximately 25% of adult Montana survey respondents are currently smokers. 80% of these smoke 10 cigarettes or fewer per day. A very encouraging finding is that 24% of adult smokers in the state survey have stopped smoking. In other words, there are almost as many ex-smokers as those who still smoke. 58% of the previous or current smokers in Montana began smoking at less than 15 years of age. 66% of smokers attempted to quit smoking entirely with 69% of those making at least two serious attempts. Of the smokers who tried to abstain the last time, 22% quit for less than 1 week but 56% succeeded for three or more months. Of the previous smokers in Montana, 89% quit more than a year prior to the survey. There is a definite sex difference in smoking behavior as noted in the choice of filter versus plain cigarettes. Males tended to prefer plain and females tended to prefer filter cigarettes. Generally, though, 75% of the previous or current smokers in the HERR survey preferred filter cigarettes. Tables 1-7 contain data collected concerning smoking in Montana.

EXERCISE

23% of adult Montana survey respondents encounter a great deal of strenuous physical activity on their job or daily tasks. Approximately 41% of adults in the state engage in appropriate physical exercise at least 3 times/week which is the recommended frequency. 71% exercise for at least 30 minutes or more at a time. 42% usually engage in exercise vigorous enough to cause perspiration. 16% of Montana survey respondents usually participate in a regular fitness program. Tables 8-12 contain data collected concerning exercise in Montana.

HIGH BLOOD PRESSURE

82% of Montana adult survey respondents had a blood pressure check within the past year. 19% were told they had hypertension. 39% were aware of high blood pressure in a parent. 75% of hypertensives had some form of treatment prescribed consisting of 89% on medication, 52% on a low salt diet, 37% on a weight loss regimen, 25% were told to exercise, 25% were told to relax, 21% were told to limit or stop smoking, and 4% had some other treatment modality prescribed. 83% of Montana adult hypertensives have been able to effectively control their high blood pressure. Tables 13-18 contain data collected concerning hypertension in Montana.

STRESS

24% of Montana adult survey respondents were worried or nervous often or all the time. 44% claimed they were more aggressive than most people in getting what they wanted. Only 12% of individuals claimed they were often or all the time upset with people. 87% confronted their problems and hoped things would improve as responses to stress; 83% talked over their problems with someone else; 74% relaxed; 73% used anger; 53% endured the problem; 47% exercised; 19% used alcohol and sleep; 12% used other mechanisms and 8% used medication. 84% of survey respondents claimed they were mostly satisfied with life. 59% stated they had strong ties with family and friends. 24% have suffered some personal loss or misfortune in the year prior to the survey. 11% have witnessed or become involved in a violent or potentially violent argument in the year preceding the survey. Tables 19-26 contain data collected concerning stress in Montana.

NUTRITION

62% of adult survey respondents ate breakfast almost every day. 61% took vitamins at least on an occasional basis. 28% ate desserts or sweets on a daily basis; 9% ate salty snacks daily. In general, 34% of Montana's adult population have no snacks during the course of the day. 15% are on a special or weight reduction diet. Most Montana adults get their nutrition information from popular books or magazines (54%) followed by the media (48%), physicians (36%), other health professionals (19%), other sources (12%), and naturopaths or diet centers (7%). Tables 27-33 contain data collected concerning nutrition in Montana.

DRINKING (ALCOHOL)

71% of adult Montana survey respondents drank alcoholic beverages. Only 7% of these current alcohol consumers drank every day. 43% of the alcohol consumers in the state survey currently reported drinking less than in the two years preceding the survey. 40% of the alcohol consumers have once, in the month prior to the survey, had 5 or more drinks on an occasion. 27% in the year preceding the survey, had driven a car at least once after having a "good bit to drink;" 35% reported driving at least once after having at least 6 drinks in two hours. 2% of the Montana survey respondents had been warned that drinking was injuring their health. Tables 34-40 contain data collected concerning drinking (alcohol) in Montana.

DIABETES

4% of Montana adult survey respondents have a father with diabetes; 8% a mother; 5% a brother or sister; 2% a child or children; and 17% have other blood relatives with diabetes. 7% of adult Montanans have been warned that their blood sugar level was too high or that they had diabetes. 2% of Montanans are diabetic, 100% of whom were told so by a physician. 87% of the diabetics in the state are currently on treatment modalities ranging from 92% on special diets to 8% on some other form of treatment. 75% of current diabetics in the state got their diabetic information from their doctor and 28% received their information from the diabetes association. Tables 41-47 contain data collected concerning diabetes in Montana.

GENERAL HEALTH & SAFETY

86% of Montana adult survey respondents rate their health as excellent (34%) or good (52%). 60% of Montana adults have at least a yearly dental checkup with females visiting more often than males. 37% of Montana adults with children always or usually use child restraint devices when riding in a car; 48% never or rarely do. 16% of Montana adults always or usually use safety belts when riding in a motor vehicle; 59% never or rarely do. 22% of Montana adults have worked at a hazardous job. 4% have had a heart attack; 15% a major motor vehicle accident; 16% bronchitis; and 4% have had cancer. 40% of Montana adults avoid better health due to inconvenience; 37% enjoy the habit; 35% lack the time; and 30% claim that high costs keep them from better health care. 44% of adults are overweight; 2% are underweight. Tables 48-56 contain data collected concerning the general health and safety of adult Montanans.



Chapter 1

Smoking

Cigarette smoking is the single most important preventable cause of death and disease.¹ As an initial indicator of risk, it is associated with more premature deaths than any other lifestyle behavior. Specifically, smokers have a significantly increased rate of premature death for the three leading causes of mortality - coronary heart disease (CHD), cancer and strokes. In fact, estimates as high as 320,000 premature deaths a year in the United States can be attributed to cigarette smoking.¹

Table 1 illustrates the smoking status of adult Montanans. The prevalence rate (ever smokers of 100 or more cigarettes) of adults is 49%. This compares with 54% in a 1978 national survey.² Montana males (62%) compared to Montana females (41%) were more likely to have smoked sometime during their lifetime. The 35-54 year age group consisted of nearly 56% "ever smokers" as compared to approximately 45% of the younger and older Montanans. Fewer "ever smokers" were found as the educational level of the adults increased. However, more "ever smokers" were found as family income increased. Nearly half of the "ever smokers" decided to quit smoking, leaving 25% adult Montanans who currently smoke cigarettes. This compares to 34% nationally.¹

The difference in the number of male (31%) and female (22%) smokers is decreasing as 50% of the adult males decided to quit compared to 46% of the adult females. The findings from these data suggest that older Montanans have become more aware of the harmful effects of smoking and decide to quit because in the 55 and older age group, 58% of "ever smokers" have quit compared to 42% of the 18-34 age group. Consequently, 26% of the youngest age group now smoke compared to 19% of the oldest age group. Furthermore, as educational level rises, more smokers decide to quit. In fact, only 13% of college graduates are current smokers in contrast to 30% of adults with less than a high school education. Little difference exists in the percentages of current smokers if income is examined.

TABLE 1 - SMOKING STATUS

| Q. Have you ever smoked at least 100 cigarettes in your life? | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| Q. Do you smoke cigarettes now? | | | | | | | | | | | | | | |
| | Sex | | | Age | | | | Education | | | Income | | | |
| | Total | M | F | 18-34 | 35-54 | 55+ | less than high school | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| (Number of respondents) | (499) | (183) | (316) | (185) | (158) | (153) | (77) | (196) | (117) | (106) | (102) | (157) | (101) | (50) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Current Smoker | 25 | 31 | 22 | 26 | 28 | 19 | 30 | 29 | 25 | 13 | 24 | 27 | 27 | 26 |
| Ex-Smoker | 24 | 31 | 19 | 19 | 27 | 26 | 27 | 21 | 23 | 26 | 18 | 24 | 28 | 30 |
| Never Smoked | 52 | 39 | 59 | 55 | 44 | 56 | 43 | 50 | 52 | 61 | 59 | 50 | 46 | 44 |

¹United States Government, Dept. of Health and Human Services, Promoting Health/Preventing Disease, Objectives for the Nation, Fall 1980, pp. 61-65.

²National Center for Health Statistics (NCHS) Survey, 1978.

Table 2 shows the age that smoking begins among Montanans. 58% of Montanans start smoking at 15 years of age or less. Generally, males in the state start smoking at an older age than females. When income is examined, as family income decreases it becomes more likely for an individual to start smoking earlier in his/her lifetime.

TABLE 2 - AGE SMOKING BEGAN
(Base: Previous or Current Smoker)

| Q. How old were you when you first started smoking cigarettes regularly? | | | | | | | | | | | | | | |
|--|--------------------|---------|---------|-------------|-------------|-----------|----------------------------|-------------------|--------------------|--------------------|----------------------|-------------------------|-------------------------|------------------------|
| | Sex | | | Age | | | | Education | | | Income | | | |
| (Number of respondents) | Total Public (500) | M (183) | F (317) | 18-34 (185) | 35-54 (158) | 55+ (154) | less than high school (77) | high school (197) | some college (117) | college grad (106) | under \$10,000 (103) | \$10,000-\$19,999 (157) | \$20,000-\$34,999 (101) | \$35,000 and over (50) |
| Less Than 15 Years | 58 | 49 | 63 | 60 | 52 | 62 | 58 | 56 | 56 | 64 | 66 | 56 | 51 | 50 |
| 15-18 Years | 25 | 35 | 20 | 29 | 28 | 18 | 34 | 27 | 22 | 18 | 21 | 29 | 29 | 32 |
| 19 And Over | 17 | 16 | 17 | 11 | 20 | 20 | 8 | 17 | 22 | 18 | 13 | 15 | 21 | 18 |

Table 3 illustrates daily cigarette consumption in Montana. Most Montanans who smoke (80%) consume less than 11 cigarettes per day. Males tended to smoke slightly more than the females in the survey. Also, those individuals with high educational levels tended to smoke less.

TABLE 3 - DAILY CIGARETTE CONSUMPTION
(Base: Current Smoker)

| Q. How many cigarettes a day do you now smoke? | | | | | | | | | | | | | | |
|--|--------------------|---------|---------|-------------|-------------|-----------|----------------------------|-------------------|--------------------|--------------------|----------------------|-------------------------|-------------------------|------------------------|
| | Sex | | | Age | | | | Education | | | Income | | | |
| (Number of respondents) | Total Public (500) | M (183) | F (317) | 18-34 (185) | 35-54 (158) | 55+ (154) | less than high school (77) | high school (197) | some college (117) | college grad (106) | under \$10,000 (103) | \$10,000-\$19,999 (157) | \$20,000-\$34,999 (101) | \$35,000 and over (50) |
| Less Than 11 | 80 | 74 | 84 | 81 | 77 | 84 | 74 | 77 | 83 | 90 | 83 | 77 | 78 | 86 |
| 11-20 | 12 | 16 | 10 | 12 | 14 | 10 | 10 | 15 | 11 | 9 | 12 | 15 | 13 | 10 |
| 21+ | 7 | 10 | 6 | 7 | 9 | 5 | 16 | 8 | 6 | 1 | 6 | 8 | 9 | 4 |

Table 4 illustrates smoking abstinence. Since it has been proven that risks of coronary heart disease and lung cancer decrease with length of time off cigarettes, it is extremely encouraging to note that of the 177 former smokers in the Montana survey, 89% stopped smoking more than a year. This compares with an 88% rate nationally.¹ A positive health development is that more of the 18-34 age group (17%) and the 35-54 age group (11%) than the 55 and older age group (5%) have quit within the past year. This trend implies that health education is beginning to reach the youngest age groups in an effective manner. Younger smokers are increasingly attempting to give up smoking. A concerted effort must now be aimed at decreasing smoking initiation in these young age groups. Also, non-college graduates (14%) and high school graduates (12%) have realized the need to quit smoking. If the trend continues, the percentage of younger ex-smokers will equal the percentage of older ex-smokers; likewise, the difference in the percentage of ex-smokers with different educational levels will decrease as well.

TABLE 4 - SMOKING ABSTINENCE

(Base: Previous Smoker)

| Q. About how long has it been since you last smoked cigarettes regularly? | | | | | | | | | | | | | | |
|---|-----------------|-----|----|-----------|-----------|-----|--------------------------------|-----------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| (Number of respondents) | (117) | M | F | 18- 34 | 35- 54 | 55+ | (20) | high- school | some college | college grad | under \$10,000 | \$10,000- \$19,999 | \$20,000- \$34,999 | \$35,000 and over |
| | | | | | | | | | | | | | | |
| 1 Month or Less | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 7 |
| 1 Month-1 Year | 10 | 15 | 7 | 17 | 9 | 5 | 5 | 10 | 14 | 11 | 12 | 16 | 4 | 0 |
| More Than 1 Year | 89 | 84 | 94 | 83 | 88 | 95 | 95 | 88 | 86 | 89 | 88 | 84 | 96 | 93 |

Table 5 shows the attempts to quit smoking in Montana. 66% of the current smokers have tried to quit smoking; nearly 58% have tried more than once. 60% of the smokers from a 1978 national survey attempted to stop smoking at some time.¹

Anti-smoking education is a priority and has been effective in persuading smokers to quit. Most of the decline in smoking prevalence, however is due to cessation and not to a lessening of smoking initiation. This should be an area for increased concentration. Approximately 11% of Montana adult smokers have quit smoking within the past year. More males (17%) have quit than females (7%). An encouraging statistic is that 9% of the 35-54 year age group and 17% of the 18-34 age group have reported that they have quit smoking within the past year.

¹ National Center for Health Statistics (NCHS) Survey, 1978.

TABLE 5 - ATTEMPTS TO QUIT SMOKING

(Base: Previous or Current Smoker)

| Q. Have you ever made a serious attempt to stop smoking? Q. How many times have you made an attempt? | | | | | | | | | | | | | | |
|---|--------------|------|------|-------|-------|------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| (Number of respondents) | (125) | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| NO | 34 | 31 | 37 | 35 | 31 | 35 | 32 | 42 | 29 | 14 | 40 | 37 | 26 | 31 |
| YES | 66 | 69 | 63 | 65 | 69 | 66 | 68 | 58 | 71 | 86 | 60 | 63 | 74 | 69 |
| ATTEMPTS (Number of respondents) | (94) | (48) | (46) | (37) | (36) | (21) | (17) | (38) | (24) | (15) | (17) | (32) | (21) | (10) |
| 1 | 43 | 44 | 41 | 51 | 36 | 38 | 47 | 45 | 38 | 40 | 53 | 50 | 24 | 50 |
| 2 | 26 | 21 | 30 | 22 | 33 | 19 | 24 | 21 | 42 | 13 | 18 | 25 | 29 | 10 |
| 3 | 17 | 13 | 22 | 16 | 19 | 14 | 24 | 16 | 13 | 20 | 12 | 16 | 33 | 10 |
| 4 | 5 | 8 | 2 | 3 | 3 | 14 | 6 | 3 | 4 | 13 | 12 | 3 | 5 | 10 |
| 5+ | 10 | 15 | 4 | 8 | 8 | 14 | 0 | 16 | 4 | 13 | 6 | 6 | 10 | 20 |

Table 6 shows the length of time Montanans stay off cigarettes. More males tended to stay off cigarettes longer than females in the state. For instance, 66% of males abstained for three or more months compared with 47% of the females.

TABLE 6 - LENGTH OF TIME OFF CIGARETTES

(Base: Previous or current smoker)

| Q. How long did you abstain from cigarettes the last time? | | | | | | |
|--|-------------------------|--------------------|-----------|------------|---------------|-----------|
| | (Number of respondents) | less than one week | 7-13 days | 14-29 days | 1 or 2 months | 3+ months |
| Total Public | (73) | 22 | 8 | 11 | 3 | 56 |
| Sex | | | | | | |
| Male | (35) | 17 | 11 | 3 | 3 | 66 |
| Female | (38) | 26 | 5 | 18 | 3 | 47 |
| Age | | | | | | |
| 18-34 | (29) | 21 | 7 | 1 | 0 | 69 |
| 35-54 | (27) | 30 | 11 | 15 | 4 | 41 |
| 55+ | (17) | 12 | 6 | 18 | 6 | 59 |
| Education | | | | | | |
| less than high school | (6) | 19 | 0 | 8 | 8 | 56 |
| high school | (14) | 27 | 10 | 10 | 1 | 50 |
| some college | (11) | 6 | 12 | 10 | 0 | 65 |
| college grad | (9) | 15 | 8 | 8 | 0 | 69 |
| Income | | | | | | |
| under \$10,000 | (11) | 31 | 0 | 15 | 8 | 46 |
| \$10,000-\$19,999 | (28) | 21 | 4 | 4 | 4 | 69 |
| \$20,000-\$34,999 | (15) | 27 | 20 | 7 | | 59 |
| \$35,000 and over | (5) | 20 | 20 | 20 | 0 | 40 |

Table 7 illustrates that of the previous or current smokers in Montana, 75% preferred filter, 20% plain and 5% had no preference. Males preferred plain cigarettes and females preferred filter cigarettes. Males also tended to have no preference over females. Those 18-34 were most likely to smoke filter cigarettes, whereas those in the older age group preferred the plain variety or had no real preference. It should be emphasized that warning consumers that changing to cigarettes with lower yields of tar and nicotine may increase smoking hazards if accompanied by smoking more cigarettes, inhaling more deeply or starting smoking earlier in life.¹

TABLE 7 - PLAIN OR FILTER CIGARETTES
(Base: Previous or current smoker)

| Q. Did/Do you usually smoke plain or filter cigarettes? | | | | | | | | | | | | | | |
|---|-----------------------|------------|------------|---------------|---------------|-------------|-------------------------------|---------------------|----------------------|----------------------|------------------------|---------------------------|---------------------------|---------------------------|
| (Number of respondents) | Sex | | Age | | | | | Education | | | Income | | | |
| | Total Public (241) | M (112) | F (129) | 18-34 (83) | 35-54 (88) | 55+ (68) | less than high school (44) | high school (98) | some college (56) | college grad (41) | under \$10,000 (42) | \$10,000-\$19,999 (79) | \$20,000-\$34,999 (55) | \$35,000 and over (28) |
| Filter | 75 | 67 | 82 | 92 | 75 | 54 | 61 | 80 | 82 | 71 | 79 | 75 | 76 | 75 |
| Plain | 20 | 25 | 16 | 8 | 22 | 34 | 27 | 17 | 14 | 27 | 17 | 23 | 16 | 25 |
| No Preference | 5 | 8 | 2 | 0 | 3 | 12 | 11 | 3 | 4 | 2 | 5 | 3 | 7 | 0 |

Observations:

Researchers have found that smokers have a similar knowledge of the harmful effects of cigarette smoking. Generally, smokers do not associate a causative relationship between smoking and health hazards. If anti-smoking education is to be effective, it must convince smokers that smoking causes higher risks for coronary heart disease, lung cancer, chronic bronchitis and emphysema, cancers of the larynx, pharynx, oral cavity, esophagus, pancreas, and bladder, and leads to other problems such as respiratory infections and stomach ulcers which if left untreated lead to more severe chronic conditions some of which have been listed.

However, awareness of the risks of smoking is only the first phase in the behavior change from smoking to non-smoking. Health education and preventive health measures, which have really been more successful in this area than is sometimes realized, must now focus on increasing self-initiated cessation; less hazardous ways of smoking, including reducing the number of cigarettes smoked per day; highlighting the immediate benefits of cessation; and decreasing smoking initiation overall. Particular attention should be directed towards high risk groups such as adolescents and pregnant women. For example, effective peer education strategies for children and youth could facilitate major gains in curbing smoking initiation. Also, workers who are exposed to occupational hazards that are exacerbated by cigarette smoking must also receive attention.¹ Furthermore, counseling by physicians and health professionals on smoking would facilitate the decline in smoking if incorporated into routine clinical practice.

¹ United States Government, Dept. of Health and Human Services, Promoting Health/Preventing Disease, Objectives for the Nation, Fall 1980, pp. 61-65.



Chapter 2

Exercise

Exercise is a positive lifestyle behavior which makes most people feel better when engaged in on a regular basis. Furthermore, appropriate physical activity is a valuable tool in the control and amelioration of obesity, coronary heart disease, hypertension, diabetes, musculoskeletal problems, respiratory diseases, stress and depression/anxiety.¹

Forty-one percent of adult Montanans engage in active exercise, which compares with a 37% rate nationally.² While exercise of any type has some benefit, strenuous (aerobic) activity on a regular basis provides more health benefits. According to the U.S. Department of Health and Human Services, "appropriate physical activity refers to exercise which involves large muscle groups in dynamic movement for periods of 20 minutes or longer, three or more days per week, and which is performed at an intensity requiring 60 percent or greater of an individual's cardiorespiratory capacity."³

Table 8 illustrates the activity patterns of adult Montanans. In general, 73% of Montanans perceived their job or daily household tasks as involving some strenuous activity. Females (75%) were more likely than males (69%) to report their job or tasks as involving some strenuous activity. This compares with a 50% rate nationally.³ High school graduates (31%) and non-high school graduates (26%) were more likely than non-college graduates (17%) and college graduates (15%) to consider their job or tasks as vigorous. Generally, the three lowest income groups rated their job or tasks as consisting of some strenuous activity.

TABLE 8 - DAILY STRENUOUS ACTIVITY

| Q. How much strenuous physical activity is required on your job or daily household tasks? | | | | | |
|---|-------------------------|--------------|------|------------|-------------|
| | (Number of respondents) | A great deal | Some | Hardly Any | None at All |
| Total Public | (500) | 23 | 50 | 22 | 5 |
| Sex | | | | | |
| Male | (183) | 28 | 41 | 24 | 7 |
| Female | (317) | 20 | 55 | 21 | 5 |
| Age | | | | | |
| 18-34 | (185) | 24 | 49 | 23 | 4 |
| 35-54 | (158) | 25 | 51 | 21 | 3 |
| 55+ | (154) | 21 | 48 | 22 | 9 |
| Education | | | | | |
| less than high school | (77) | 26 | 40 | 22 | 12 |
| high school | (197) | 31 | 50 | 17 | 3 |
| some college | (117) | 17 | 58 | 21 | 3 |
| college grad | (106) | 15 | 47 | 30 | 8 |
| Income | | | | | |
| under \$10,000 | (103) | 19 | 52 | 20 | 9 |
| \$10,000-\$19,999 | (157) | 25 | 50 | 23 | 3 |
| \$20,000-\$29,999 | (101) | 29 | 50 | 19 | 1 |
| \$30,000 and over | (50) | 14 | 46 | 30 | 10 |

¹United States Government, Dept. of Health and Human Services, Promoting Health/Preventing Disease, Objectives for the Nation, Fall 1980, pp. 79-81.

²Pacific Mutual Life Insurance Survey, Louis Harris and Associates, 1978.

³National Center for Health Statistics (NCES) Survey, 1979.

Table 9 shows that although nearly three-fourths of the adults believed their job or tasks required some activity, 41% indicated exercising three or more times per week, the recommended frequency. More males (45%) than females (40%) reported doing some type of exercise such as running, jogging, calisthenics, swimming, bicycling, and the like. Age seemed to have little influence as to whether a person participated in a regular exercise program or not, as nearly 40% of each of the three age groups exercised at least three times/week. Approximately 50% of the adults in the \$10,000-\$19,999 group and 48% in the \$35,000 and over income group met or exceeded the recommended exercise frequency of 3 or more times/week. In contrast, only 34% of the adults in the \$20,000-\$34,999 income group and 37% in the under \$10,000 group exercised on the recommended regular basis.

TABLE 9 - EXERCISE FREQUENCY

| Q. How often do you exercise or participate in an active physical sport such as running, jogging, calisthenics, swimming, bicycling, and the like? | | | | | | |
|--|-------------------------|-----------|--------------------|--------------------|---------------------|------------------------|
| | (Number of respondents) | Every Day | 3-6 times per week | 1-2 times per week | 1-3 times per month | less than once per mo. |
| Total Public | (456) | 20 | 21 | 20 | 11 | 29 |
| Sex | | | | | | |
| Male | (163) | 20 | 25 | 20 | 9 | 27 |
| Female | (293) | 21 | 19 | 20 | 12 | 29 |
| Age | | | | | | |
| 18-34 | (178) | 17 | 26 | 29 | 14 | 15 |
| 35-54 | (148) | 22 | 20 | 18 | 12 | 28 |
| 55+ | (127) | 23 | 17 | 9 | 6 | 47 |
| Education | | | | | | |
| less than high school | (62) | 15 | 15 | 13 | 8 | 50 |
| high school | (175) | 23 | 18 | 18 | 10 | 30 |
| some college | (114) | 18 | 23 | 23 | 15 | 22 |
| college grad | (102) | 22 | 28 | 23 | 9 | 19 |
| Income | | | | | | |
| under \$10,000 | (93) | 18 | 19 | 12 | 10 | 41 |
| \$10,000-\$19,999 | (145) | 24 | 26 | 19 | 8 | 23 |
| \$20,000-\$34,999 | (97) | 16 | 18 | 26 | 16 | 26 |
| \$35,000 and over | (50) | 20 | 28 | 22 | 12 | 18 |

The duration of each exercise session is recommended to be approximately 30 minutes. Table 10 illustrates that 71% of the adults in Montana who exercised fulfilled this requirement. The breakdown by sex is that 76% of the males and 69% of the females exercised for a minimum of 30 minutes. Over 84% of the 18-34 age group compared to 58% of the 55 and over age group exercised the recommended duration. When education was considered, the percentage of adults who exercised 30 minutes or more increased progressively from a low of 60% for the non-high school graduate to 81% for the college graduate. For income, the lowest percentage (65%) was found in the under \$10,000 group to the highest percentage (88%) for the \$35,000 and over income group.

TABLE 10 - DURATION OF EXERCISE

| Q. When you do exercise or participate in an active physical sport, how long are you usually involved? | | | | | |
|--|-------------------------|------------------|---------------|---------------|------------|
| | (Number of respondents) | one hour or more | 30-60 minutes | 15-30 minutes | less often |
| Total Public | (441) | 44 | 27 | 13 | 16 |
| Sex | | | | | |
| Male | (159) | 56 | 20 | 11 | 14 |
| Female | (282) | 37 | 32 | 14 | 18 |
| Age | | | | | |
| 18-34 | (176) | 53 | 31 | 8 | 7 |
| 35-54 | (143) | 41 | 25 | 17 | 17 |
| 55+ | (119) | 34 | 24 | 15 | 28 |
| Education | | | | | |
| less than high school | (60) | 35 | 25 | 10 | 30 |
| high school | (168) | 45 | 24 | 13 | 17 |
| some college | (111) | 41 | 31 | 15 | 13 |
| college grad | (99) | 51 | 30 | 10 | 9 |
| Income | | | | | |
| under \$10,000 | (89) | 39 | 26 | 12 | 23 |
| \$10,000-\$19,999 | (140) | 50 | 24 | 14 | 12 |
| \$20,000-\$34,999 | (94) | 43 | 27 | 14 | 17 |
| \$35,000 and over | (50) | 62 | 26 | 6 | 6 |

Vigorous activity (aerobic) is the type of exercise that has been reported to provide the most measurable health benefits. Table 11 shows that the percent of Montanans who exercise vigorously is 42%. In comparison, 59% of the males versus 33% of the females usually engaged in aerobic activity. Unfortunately, the tendency for vigorous exercise decreased with age, as in the 18-34 year age group 53% participated in strenuous exercise compared to 23% of the adults over 55. Again, as educational level and income increased the inclusion of vigorous exercise as an aspect of appropriate physical activity also increased.

TABLE 11 - PERSPIRATION DURING EXERCISE

| Q. How often is your exercise vigorous and long enough to cause you to perspire? | | | | | |
|--|-------------------------|------------------|-----------|--------|-------|
| | (Number of respondents) | Usually or often | Sometimes | Rarely | Never |
| Total Public | (461) | 42 | 28 | 16 | 14 |
| Sex | | | | | |
| Male | (167) | 59 | 28 | 7 | 7 |
| Female | (294) | 33 | 28 | 21 | 18 |
| Age | | | | | |
| 18-34 | (178) | 53 | 31 | 11 | 6 |
| 35-54 | (147) | 48 | 22 | 18 | 12 |
| 55+ | (133) | 23 | 29 | 21 | 27 |
| Education | | | | | |
| less than high school | (66) | 33 | 23 | 11 | 33 |
| high school | (178) | 43 | 24 | 19 | 15 |
| some college | (112) | 42 | 31 | 21 | 6 |
| college grad | (102) | 48 | 33 | 11 | 8 |
| Income | | | | | |
| under \$10,000 | (97) | 32 | 27 | 16 | 26 |
| \$10,000-\$19,999 | (148) | 46 | 27 | 15 | 12 |
| \$20,000-\$34,999 | (96) | 53 | 23 | 18 | 6 |
| \$35,000 and over | (50) | 52 | 36 | 8 | 4 |

Table 12 illustrates that the perception of adult Montanans is that the exercise program is more recreational in nature rather than exercise to enhance cardiovascular fitness. Only 16% of the adults stated they participated in a regular fitness program. When sex was examined, only a slight difference existed between males (15%) and females (16%). For the 18-34 age group, 23% compared to 6% of the 55 and over age group reported a regular fitness program. For both education and income, as they increased so was there an increase in a reporting of regular fitness program participation.

TABLE 12 - PARTICIPANT IN REGULAR FITNESS PROGRAM

| Q. Do you currently participate in a regular fitness program? | | | | | | | | | | | | | | |
|---|--------------------|---------|---------|-------------|-------------|-----------|----------------------------|-------------------|--------------------|--------------------|----------------------|-------------------------|-------------------------|------------------------|
| (Number of respondents) | Total Public (499) | Sex | | Age | | | less than high school (76) | Education | | | Income | | | |
| | | M (183) | F (316) | 18-34 (185) | 35-54 (158) | 55+ (153) | | high school (197) | some college (117) | college grad (106) | under \$10,000 (103) | \$10,000-\$19,999 (157) | \$20,000-\$34,999 (101) | \$35,000 and over (50) |
| YES | 16 | 15 | 16 | 23 | 17 | 6 | 5 | 11 | 20 | 28 | 10 | 15 | 23 | 26 |
| NO | 84 | 85 | 84 | 77 | 83 | 94 | 95 | 89 | 80 | 72 | 90 | 85 | 77 | 74 |

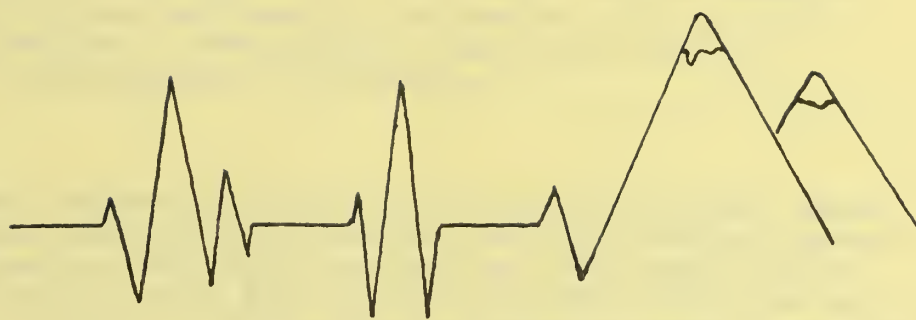
Observations:

Though growing, the awareness of the health benefits of regular exercise is limited. Most Montanans do not engage in "appropriate physical activity." While a great many people will claim they engage in strenuous activity, their definition of activity does little to enhance cardiovascular and cardiorespiratory functioning. For example, a 1978 Louis Harris poll found that 59% of the respondents claimed to exercise regularly, however, only 15% were active enough to achieve fitness.¹ In other words, many who claim that their job or tasks are vigorous oftentimes have relatively undemanding jobs as far as fitness is concerned; their strenuous jobs are often the result of "nervous activity" and not appropriate physical activity.

A 1978 national survey found that fully three-quarters of those who recognize that they needed more exercise never were advised of this by their doctor.² Physicians should encourage patients to take more exercise and routinely inquire about exercise habits in routine clinical history. Other health professionals in the private and public sectors should also encourage and convince individuals that exercise involving "appropriate physical activity" can be both beneficially risk reducing and fun as well.

¹Sports Illustrated, February 1983, p.64.

²Pacific Mutual Life Insurance Survey, Louis Harris and Associates, 1978.



Chapter 3

High Blood Pressure

Hypertension (high blood pressure) is a silent disease that dramatically affects one's predisposition to strokes and coronary heart disease, and contributes as well to kidney and eye diseases. High blood pressure often begins early in life and progressively elevates with age. It is estimated that 90-95% of the cases of hypertension have an unknown cause, but increasing evidence suggests that excessive sodium in the diet, stress and hereditary factors all play a role. Recent dietary research has also linked other minerals to hypertension besides sodium. For instance, calcium, magnesium and potassium have all been implicated in hypertension. It is believed that possibly an imbalance in these essential minerals may play an important role in the development of hypertension.¹

If hypertension intervention is to be effective, blood pressure checks must be done routinely. Table 13 illustrates that 82% of the adults in Montana have had a blood pressure check within the past year. This breaks down to 87% of the females and 73% of the males compared with 74% of the males and 83% of the females nationally.² Increased age and education made it more likely that adults would have their blood pressure checked.

TABLE 13 - TIME SINCE LAST BLOOD PRESSURE CHECK

| Q. When did you last have your blood pressure checked? | | | | | | |
|--|-------------------------|----------------|-----------------|---------------|---------------------|---------------|
| | (Number of respondents) | 0-6 months ago | 7-12 months ago | 1-2 years ago | 2 or more years ago | Never Checked |
| Total Public | (495) | 67 | 15 | 11 | 6 | 1 |
| Sex | | | | | | |
| Male | (181) | 59 | 14 | 15 | 11 | 2 |
| Female | (314) | 72 | 15 | 9 | 4 | 0 |
| Age | | | | | | |
| 18-34 | (184) | 61 | 14 | 17 | 7 | 1 |
| 35-54 | (157) | 67 | 18 | 8 | 8 | 0 |
| 55+ | (151) | 76 | 12 | 7 | 4 | 1 |
| Education | | | | | | |
| less than high school | (75) | 71 | 15 | 8 | 7 | 0 |
| high school | (196) | 67 | 16 | 8 | 8 | 1 |
| some college | (115) | 70 | 14 | 10 | 5 | 1 |
| college grad | (106) | 63 | 13 | 20 | 4 | 0 |
| Income | | | | | | |
| under \$10,000 | (102) | 72 | 13 | 13 | 3 | 0 |
| \$10,000-\$19,999 | (156) | 62 | 17 | 10 | 10 | 1 |
| \$20,000-\$34,999 | (101) | 63 | 16 | 14 | 7 | 0 |
| \$35,000 and over | (50) | 78 | 8 | 12 | 2 | 0 |

¹Contemporary Nutrition, Diet and Hypertension: an update on recent research, Holly Henry, M.S., and David McCarron, M.D.. Nov., 1982, Vol. 7, No. 11, General Mills Nutrition Dept.

²National Center for Health Statistics (NCHS) Survey, 1979.

Table 14 shows that over 20% of Montanans were told that they had high blood pressure, which is slightly higher than the national average of 18%. Women (22%) reported more confirmed cases of hypertension than men (17%). The percent of hypertension cases ranged from 10% for the 18-34 age group to 38% for the 55 and over age group. College graduates (18%) were the least likely to have elevated blood pressure while non-high school graduates (30%) were the most likely. Also, as income rose, the percent of those with elevated blood pressure decreased.

TABLE 14 - EVER ADVISED OF HIGH BLOOD PRESSURE

| Q. Have you ever been told by a doctor, nurse, or someone else that you have high blood pressure? | | | | | | | | | | | | | | |
|---|--------------|-----|----|-------|-------|-----|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| (Number of respondents) | (499) | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | | | | | | | | | | | | | | |
| NO | 80 | 83 | 78 | 90 | 84 | 62 | 70 | 81 | 80 | 82 | 77 | 78 | 82 | 88 |
| Yes-Doctor | 19 | 15 | 21 | 9 | 14 | 36 | 29 | 18 | 18 | 15 | 21 | 20 | 17 | 10 |
| Yes-Nurse | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 3 | 1 | 1 | 1 | 0 |
| Yes-Someone Else | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 2 |

Table 15 illustrates that 39% of adults were aware of hypertension in their natural parents. Again, females (42%) were more aware of this fact than males (32%). It is interesting to note that the 35-54 year olds (49%) tended to be more aware of hypertension than their younger (33%) or older (34%) counterparts. Increased educational level was directly related to awareness of parents with hypertension as well. A similar trend occurred among income groups where approximately 27% of the under \$10,000 group were aware of hypertension among a natural parent compared to over 42% of those with incomes of \$10,000 and over.

TABLE 15 - HIGH BLOOD PRESSURE IN PARENTS

| Q. Did/Doe either of your natural parents have high blood pressure? | | | | | | | | | | | | | | |
|---|--------------|-----|----|-------|-------|-----|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| (Number of respondents) | (480) | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | | | | | | | | | | | | | | |
| YES | 39 | 32 | 42 | 33 | 49 | 34 | 31 | 37 | 39 | 46 | 27 | 43 | 47 | 47 |
| NO | 61 | 68 | 58 | 67 | 51 | 66 | 69 | 63 | 61 | 54 | 74 | 57 | 53 | 53 |

Table 16 illustrates that three-fourths of Montanans with diagnosed cases of hypertension received treatment of some form. More females (76%) reported being treated than males (71%). As the age groups increased there was an increased tendency for prescribed treatment. Surprisingly, as educational level increased there was a decrease in the prescribed treatment for hypertension. Also, a general decline in the percent treated was recorded in the less than \$10,000 income group where nearly 88% were on prescribed programs compared with less than 67% for the greater than \$35,000 income group.

TABLE 16 - HYPERTENSIVE TREATMENT EVER PRESCRIBED
(Base: Current Hypertensive)

| Q. Has any treatment ever been prescribed for your high blood pressure? | | | | | | | | | | | | | | |
|---|-----------------------|-----------|-----------|---------------|---------------|-------------|-------------------------------|---------------------|----------------------|----------------------|------------------------|---------------------------|---------------------------|--------------------------|
| (Number of respondents) | Sex | | | Age | | | | Education | | | Income | | | |
| | Total Public (102) | M (31) | F (71) | 18-34 (18) | 35-54 (26) | 55+ (58) | less than high school (23) | high school (37) | some college (23) | college grad (19) | under \$10,000 (24) | \$10,000-\$19,999 (35) | \$20,000-\$34,999 (18) | \$35,000 and over (6) |
| NO | 26 | 29 | 24 | 50 | 42 | 10 | 17 | 24 | 22 | 42 | 13 | 34 | 22 | 33 |
| YES | 75 | 71 | 76 | 50 | 58 | 90 | 83 | 76 | 78 | 58 | 88 | 66 | 78 | 67 |

The type of treatment programs are in table 17. The most common treatment approach was the use of medication. Of the 89% of the adults on medication, 91% were males and 89% were females. For the oldest hypertensive group (55 and over) there were 98% on medication, while the youngest hypertensive group (18-34) consisted of 67% on medication. The non-high school graduates were more likely than the more educated groups to receive medication. Over 95% of the people with less than \$20,000 income were likely to receive medication compared to less than 75% of those with incomes greater than \$20,000.

The rank order of other treatment types was low salt diet (52%), weight loss (37%), exercise (25%), relaxation (25%), smoking reduction (21%), and other (4%). Hypertensive females were more likely to have salt reduction (59%) and weight loss (42%) prescribed compared to males who were requested to reduce salt intake (36%) and smoking (36%). Low salt diet was recommended more frequently for hypertensive individuals above 35 years of age (over 56%), high school graduates (68%) and those in the over \$35,000 income group (75%). The \$35,000 and over income group was most likely to receive multi-treatments such as salt (75%), exercise (50%), smoking reduction (50%), and relaxation (50%). However, the 18-34 age group reported that exercise was never prescribed for reducing elevated blood pressure.

TABLE 17 - TREATMENT FOR HIGH BLOOD PRESSURE

(Base: current hypertensive)

| Q. Which possible treatments were prescribed for your high blood pressure? | | | | | | | | |
|--|-------------------------|-------------------------------|---------------------|----------------|---------------|-----------------|-----------------------------|-------------------------------|
| | (Number of respondents) | Medi- cation or pill | low salt diet | weight loss | exer- cise | relax- ation | limit or stop smoking | Other See Appen- dix |
| Total Public | (75) | 89 | 52 | 37 | 25 | 25 | 21 | 4 |
| Sex | | | | | | | | |
| Male | (22) | 91 | 36 | 27 | 23 | 18 | 36 | 9 |
| Female | (53) | 89 | 59 | 42 | 26 | 28 | 15 | 2 |
| Age | | | | | | | | |
| 18-34 | (9) | 67 | 22 | 22 | 0 | 11 | 11 | 0 |
| 35-54 | (14) | 71 | 57 | 36 | 36 | 21 | 21 | 7 |
| 55+ | (52) | 98 | 56 | 40 | 27 | 29 | 23 | 4 |
| Education | | | | | | | | |
| less than high school | (18) | 94 | 39 | 33 | 22 | 28 | 22 | 6 |
| high school | (28) | 93 | 68 | 29 | 29 | 29 | 18 | 7 |
| some college | (18) | 78 | 44 | 56 | 22 | 22 | 28 | 0 |
| college grad | (11) | 91 | 46 | 36 | 27 | 18 | 18 | 0 |
| Income | | | | | | | | |
| under \$10,000 | (21) | 95 | 57 | 29 | 29 | 24 | 14 | 5 |
| \$10,000-\$19,999 | (23) | 96 | 39 | 39 | 26 | 26 | 22 | 4 |
| \$20,000-\$34,999 | (14) | 71 | 43 | 43 | 7 | 7 | 21 | 0 |
| \$35,000 and over | (4) | 75 | 75 | 25 | 50 | 50 | 50 | 25 |

Table 18 illustrates that 83% of the adults with hypertension had successfully controlled it. Males (90%) seemed to have responded to the treatment better than females (80%). The groups with the greatest percent with elevated blood pressures after treatment were the non-college graduate (25%), 55 and over (22%), and the \$20,000-\$34,999 income group (25%).

TABLE 18 - BLOOD PRESSURE STILL HIGH

(Base: Previous or current hypertensive)

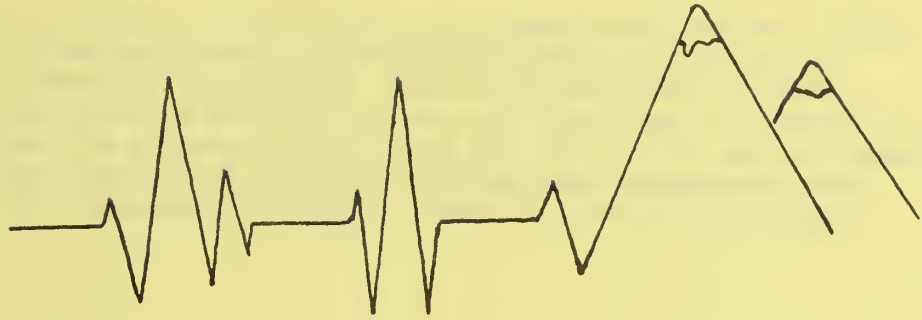
| Q. As far as you know, is your blood pressure still high? | | | | | | | | | | | | | | |
|---|--------------|------|------|-------|-------|------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| | | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| (Number of respondents) | (94) | (29) | (65) | (16) | (24) | (54) | (22) | (35) | (20) | (17) | (23) | (31) | (16) | (6) |
| NO | 83 | 90 | 80 | 88 | 92 | 78 | 82 | 86 | 75 | 88 | 91 | 87 | 75 | 100 |
| YES | 17 | 10 | 20 | 13 | 8 | 22 | 18 | 14 | 25 | 12 | 9 | 13 | 25 | 0 |

Observations:

There is an increased prescription of other modalities besides medication in high blood pressure control. A Louis Harris Survey for the Pacific Mutual Life Insurance Company in 1978 indicated that most people were aware of at least some of the major causes of hypertension. More than 60% of the population mentioned overweight, stress and salt, while more than 30% knew that excessive drinking, fatty foods, heredity, and smoking could all increase the chances of developing high blood pressure. There is, no doubt, much greater public awareness of the dangers of eating too much salt, up 37% to 61% from 1973-78.

Montana's 1981 data suggests that even with this increased awareness among the public, still only as many as 52% of hypertensives were being treated with modalities other than medication. Physicians must use preventive medicine to communicate with their patients to convince them that lifestyle changes are in order. Individualized treatment regimens should be incorporated into routine clinical practice. Since high blood pressure is a multifactorial phenomenon in which the specific cause of 90-95% of cases is unknown, no single treatment/control regimen is necessarily right for all individuals involved.¹ For example, diet, exercise and stress management should be considered along with the possibility of pharmaceutical intervention. Other health professionals should utilize health education/risk reduction efforts to recommend semi-annual blood pressure checks and encourage compliance with prescribed treatment modalities.

¹United States Government, Dept. of Health and Human Services. Promoting Health/Preventing Disease, Objectives for the Nation. Fall 1980, p. 5.



Chapter 4

The term stress refers to "those pressures and tensions (whether behaviorally, biologically, economically or environmentally induced) which, unless suitable managed, can lead to psychological or physiological maladaptations manifested in phenomena such as fatigue, headache, obesity, absenteeism, illness, accident-proneness or violence." ¹ There is increasing public awareness that unmanaged stress can be harmful for physical as well as mental health.

Happiness and fulfillment of lifetime goals create emotional well-being and wellness. Being worried, overly aggressive and upset with people or events eventually culminates in emotional upheaval and distress if left unmanaged. Moreover, there is mounting evidence on the effect stress plays on disease causation; the evidence is strongest for depression, coronary heart disease, peptic ulcer, asthma and diabetes. Furthermore, stress may predispose or ¹sustain an individual to chronic disease or precipitate violent behavior.

Table 19 indicates that nearly one-fourth of the adults in Montana were worried or nervous "often" or "all the time". Females (25%) were "often" or "all the time" more worried than males (20%). A positive factor is that there was a gradual reduction with increased age in being often worried. The same general decrease was found with increased education. However, the highest percent of people "often or all the time" worried occurred in the \$35,000 and over income group (36%) compared to the lowest percent in the \$10,000-\$19,999 income group (21%).

TABLE 19 - HOW OFTEN WORRIED OR NERVOUS

| Q. How often are you worried or nervous, in general? | | | | | | |
|--|-------------------------|-----------------|-------|-----------|--------|-------|
| | (Number of respondents) | All of the time | Often | Sometimes | Seldom | Never |
| Total Public | (495) | 5 | 19 | 35 | 38 | 4 |
| Sex | | | | | | |
| Male | (183) | 4 | 16 | 25 | 47 | 7 |
| Female | (312) | 5 | 20 | 40 | 32 | 2 |
| Age | | | | | | |
| 18-34 | (184) | 4 | 22 | 33 | 39 | 2 |
| 35-54 | (157) | 5 | 19 | 35 | 38 | 4 |
| 55+ | (151) | 6 | 15 | 36 | 36 | 7 |
| Education | | | | | | |
| Less than high school | (77) | 12 | 14 | 30 | 36 | 8 |
| high school | (193) | 4 | 22 | 36 | 35 | 2 |
| some college | (117) | 3 | 19 | 33 | 39 | 6 |
| college grad | (105) | 3 | 16 | 37 | 41 | 3 |
| Income | | | | | | |
| under \$10,000 | (101) | 5 | 21 | 34 | 39 | 2 |
| \$10,000-\$19,999 | (156) | 5 | 15 | 36 | 39 | 5 |
| \$20,000-\$34,999 | (101) | 1 | 24 | 42 | 33 | 1 |
| \$35,000 and over | (50) | 8 | 28 | 20 | 40 | 4 |

¹ United States Government, Dept. of Health and Human Services, Promoting Health/Preventing Disease, Objectives for the Nation, Fall, 1980, p.83.

Findings on the perception of adult aggressiveness in Montana are illustrated in table 20. Males (50%) believed they were more aggressive in getting what they wanted than females (41%), however, perceived aggressiveness decreased with age from a high in the (18-34) age group of 51% to a low of 31% in the (55 and over) age group. There was also a trend for increased aggressiveness with increasing levels of education. For income, perceived aggression increased from a low of 29% for those under \$10,000 to a high of 67% for those in the \$20,000-\$34,999 income level and then decreased to 59% for those in the \$35,000 and over income group.

TABLE 20 - AGGRESSIVENESS

| Q. Are you more aggressive than most people in getting what you want? | | | | | | | | | | | | | | |
|---|--------------|-------|-------|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | | Sex | | Age | | | less than high school | Education | | | Income | | | |
| | Total Public | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| (Number of respondents) | (495) | (183) | (312) | (184) | (157) | (151) | (77) | (193) | (117) | (105) | (101) | (156) | (101) | (50) |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| NO | 56 | 50 | 59 | 49 | 51 | 69 | 63 | 58 | 55 | 49 | 71 | 60 | 33 | 41 |
| YES | 44 | 50 | 41 | 51 | 49 | 31 | 37 | 43 | 45 | 51 | 29 | 40 | 67 | 59 |

Table 21 illustrates that 12% of adult Montanans reported being uptight, upset or irritable often or all the time. A disproportionate number of females (15%) than males (8%) indicated at least "often" being discontent with those around them. The youngest (18-34) age group were "often irritable" or upset (17%) as compared with 4% of those 55 or over. 15% of the individuals with college degrees indicated being "often" discontent: the percentages decreased generally as the educational level decreased with the lowest being the non-high school graduate (9%). The percent of people who were "often or usually" irritable rose with income; however, the percent peaked at the \$20,000-\$34,999 level (17%) and the lowest was at the \$35,000 and over income level (8%).

TABLE 21 - HOW OFTEN UPSET WITH PEOPLE

(Base: Previous or current smoker)

| Q. How often do you get upset, uptight, or irritable with those around you? | | | | | | |
|---|-------------------------|-----------------|-------|-----------|--------|-------|
| | (Number of respondents) | All of the time | Often | Sometimes | Seldom | Never |
| Total Public | (493) | 1 | 11 | 39 | 45 | 4 |
| Sex | | | | | | |
| Male | (181) | 1 | 7 | 37 | 51 | 5 |
| Female | (312) | 1 | 14 | 41 | 41 | 4 |
| Age | | | | | | |
| 18-34 | (184) | 1 | 16 | 41 | 39 | 3 |
| 35-54 | (157) | 1 | 12 | 44 | 42 | 1 |
| 55+ | (149) | 1 | 3 | 32 | 54 | 9 |
| Education | | | | | | |
| less than high school | (75) | 1 | 8 | 35 | 44 | 12 |
| high school | (194) | 1 | 11 | 44 | 41 | 3 |
| some college | (115) | 0 | 11 | 37 | 50 | 2 |
| college grad | (106) | 3 | 12 | 36 | 46 | 3 |
| Income | | | | | | |
| under \$10,000 | (102) | 2 | 11 | 31 | 47 | 9 |
| \$10,000-\$19,999 | (157) | 1 | 12 | 39 | 46 | 3 |
| \$20,000-\$34,999 | (100) | 1 | 16 | 47 | 34 | 2 |
| \$35,000 and over | (50) | 0 | 8 | 46 | 44 | 2 |

Stress coping mechanisms can be divided into either short term and hence relatively "life-threatening" or long term and hence relatively "life-enhancing." Short term coping mechanisms consist of getting angry, use of alcohol, enduring the problem, sleeping or taking medication; while the more long term, life-enhancing coping skills include exercise, relaxation or prayer, discussing the problem with others, confronting the problem or hoping things improve.¹ The results of the use of these by Montana adults in coping with stress are illustrated in table 22.

The short term, life-threatening skills that Montanans tended to use were "getting angry" (73%), and "enduring the problem" (53%). Taking medication (8%) was the least reported short term response to stress. Males were more likely than females to "endure the problem", "drink alcoholic beverages", and "sleep" as responses to stressful situations. Females reported a greater tendency to sometimes use anger as a means of stress alleviation. The pattern of medication use was almost identical for males and females. Generally, the tendency to endure the problem, get angry, and drink alcohol as stress responses decreased with age; however, the reverse trend was noted for taking medication as a means of dealing with stress, as the lowest use of medication was in the (18-34) age group (4%), and the highest was among those 55 and over (15%). Medication use was highest among the non-high school graduate (13%) but then increased with education. Drinking as a coping mechanism was highest among college graduates (26%). Seemingly, the responsive approaches to stress such as drinking alcohol and anger, increased with income while the receptive approaches such as taking medication and sleep decreased with income. One paradox is that those with an income under \$10,000, (13%) were more likely to use medication or pills than those with an income of \$35,000 and over (4%).

As for the type of long term, life-enhancing skills used by adults in Montana to cope with stress, "confront the problem" & "hope things improve" (87%) were the most prevalent. Females were more likely than males to use "hope," talking with someone else, and medication and/or prayer as responses to stress. Males, on the other hand, expressed a greater tendency toward confrontation and exercise as a means to cope with stress. For all the life-enhancing skills there was a decrease in the use of these coping mechanisms from the younger to the older adults. Furthermore, there was an increase in the percent of people using these long term skills as the educational level increased. A general finding for income was that the upper income group (\$35,000 and over) was more likely to utilize life-enhancing skills than the lower income groups (less than \$20,000). The exception was "hope things improve" and there was a decrease in using this mechanism as a means of coping as income increased.

TABLE 22 - STRESS RESPONSES

| Q. Which mechanisms do you sometimes use to respond to stress? | | | | | | | | | | | | |
|--|-------------------------|-------|----------|---------|------------|-------|--------|-----------|-------|------------------|------|----------------------|
| | (Number of respondents) | Anger | Exercise | Alcohol | Medication | Relax | Endure | Talk over | Sleep | Confront Problem | Hope | Other (See Appendix) |
| Total Public | (499) | 73 | 47 | 19 | 8 | 74 | 53 | 83 | 19 | 87 | 87 | 12 |
| Sex | | | | | | | | | | | | |
| Male | (183) | 71 | 50 | 30 | 8 | 67 | 60 | 78 | 21 | 88 | 81 | 7 |
| Female | (316) | 74 | 45 | 14 | 8 | 78 | 49 | 86 | 17 | 87 | 91 | 15 |
| Age | | | | | | | | | | | | |
| 18-34 | (185) | 80 | 57 | 28 | 4 | 78 | 60 | 93 | 21 | 92 | 92 | 10 |
| 35-54 | (158) | 77 | 46 | 17 | 5 | 76 | 51 | 89 | 19 | 91 | 83 | 13 |
| 55+ | (153) | 61 | 37 | 12 | 15 | 68 | 48 | 65 | 16 | 78 | 86 | 14 |
| Education | | | | | | | | | | | | |
| less than high school | (77) | 66 | 30 | 20 | 13 | 62 | 48 | 73 | 22 | 75 | 79 | 8 |
| high school | (196) | 72 | 42 | 18 | 6 | 74 | 58 | 83 | 19 | 86 | 87 | 13 |
| some college | (117) | 75 | 56 | 16 | 8 | 82 | 46 | 86 | 14 | 90 | 91 | 15 |
| college grad | (106) | 78 | 60 | 26 | 9 | 75 | 57 | 90 | 21 | 96 | 90 | 11 |
| Income | | | | | | | | | | | | |
| under \$10,000 | (102) | 73 | 40 | 18 | 13 | 74 | 59 | 77 | 24 | 79 | 90 | 17 |
| \$10,000-\$19,999 | (157) | 73 | 52 | 18 | 6 | 75 | 52 | 83 | 19 | 90 | 87 | 15 |
| \$20,000-\$34,999 | (101) | 76 | 43 | 25 | 9 | 65 | 61 | 92 | 16 | 90 | 87 | 12 |
| \$35,000 and over | (50) | 80 | 64 | 28 | 4 | 80 | 44 | 90 | 18 | 92 | 84 | 12 |

¹Ohio Dept. of Health, 1982 Health Risk Prevalence Survey, pp. 38-39

Table 23 illustrates life satisfaction. 84% of adult Montanans were mostly satisfied with life as compared to 3% who were mostly disappointed. A greater percent of females (85%) were "mostly satisfied" than males (80%). When age was examined the largest percent of those mostly happy were the (35-54) age group (90%) and the least were the (18-34) year olds (79%). Education level was a minimum influence on life satisfaction. Yet, a greater percent of individuals were satisfied with their life as the income level increased.

TABLE 23 - SATISFACTION WITH LIFE

| Q. In general, how satisfied are you with life? | | | | | | | | | | | | | | |
|---|--------------------|-----|----|-------------|-------------|-----------|----------------------------|-------------------|--------------------|--------------------|----------------------|-------------------------|------------------------|------------------------|
| (Number of respondents) | Total Public (493) | Sex | | Age | | | less than high school (75) | Education | | | Income | | | |
| | | M | F | 18-34 (183) | 35-54 (157) | 55+ (150) | | high school (194) | some college (116) | college grad (106) | under \$10,000 (101) | \$10,000-\$19,999 (157) | \$20,000-\$34,999 (99) | \$35,000 and over (50) |
| Mostly Satisfied | 84 | 80 | 85 | 79 | 90 | 83 | 83 | 83 | 85 | 84 | 75 | 82 | 88 | 98 |
| Partly Satisfied | 14 | 17 | 12 | 18 | 8 | 15 | 12 | 14 | 12 | 15 | 21 | 15 | 11 | 0 |
| Mostly Disappointed | 3 | 3 | 3 | 4 | 2 | 3 | 5 | 3 | 3 | 1 | 4 | 3 | 1 | 2 |

Table 24 indicates strength of social and family ties with adults in Montana. A majority of adults (59%) expressed "very strong" ties with family and friends. As would be expected, more women (65%) than men (48%) indicated strong ties. The indication of very strong ties increased with education from a low among non-high school graduates (46%) to a high among college graduates (66%). Generally, when age and income categories were examined, the (18-34) age group (63%) and the (\$10,000 and under) income group (61%) expressed the strongest ties to family and friends.

TABLE 24 - SOCIAL TIES WITH FAMILY AND FRIENDS

| Q. How strong do your social ties with family and friends tend to be? | | | | | | | | | | | | | | |
|---|--------------------|-----|----|-------------|-------------|-----------|----------------------------|-------------------|--------------------|--------------------|----------------------|-------------------------|-------------------------|------------------------|
| (Number of respondents) | Total Public (497) | Sex | | Age | | | less than high school (77) | Education | | | Income | | | |
| | | M | F | 18-34 (183) | 35-54 (158) | 55+ (153) | | high school (195) | some college (116) | college grad (106) | under \$10,000 (101) | \$10,000-\$19,999 (156) | \$20,000-\$34,999 (101) | \$35,000 and over (50) |
| Very Strong | 59 | 48 | 65 | 63 | 58 | 57 | 46 | 59 | 62 | 66 | 61 | 58 | 57 | 58 |
| About Average | 37 | 47 | 31 | 33 | 37 | 41 | 49 | 39 | 33 | 30 | 37 | 39 | 34 | 42 |
| Weaker Than Average | 4 | 5 | 3 | 4 | 6 | 2 | 5 | 3 | 5 | 4 | 2 | 3 | 9 | 0 |

Table 25 indicates the percent of Montanans who have suffered some misfortune in the preceding year. Of the adult Montanans surveyed, 24% indicated that they had suffered some misfortune such as death, divorce, jail term and job loss. More males (28%) than females (23%) indicated that they had suffered some serious personal loss. A slight decrease in the percent of those suffering some misfortune occurred with an increase in age group. The greatest percent of those suffering, when grouped by education, was the high school graduate (28%). When income was examined, more of the under \$10,000 group (31%) indicated having a serious personal loss or misfortune during the preceding year than the higher income levels.

TABLE 25 - PERSONAL MISFORTUNE IN PAST YEAR

| Q. Have you suffered any serious personal loss or misfortune during the past twelve months? | | | | | | | | | | | | | | |
|---|-----------------------|------------|------------|----------------|----------------|--------------|-------------------------------|----------------------|-----------------------|-----------------------|-------------------------|----------------------------|----------------------------|---------------------------|
| (Number of respondents) | Total Public (499) | Sex | | Age | | | less than high school (77) | Education | | | Income | | | |
| | | M (182) | F (317) | 18-34 (185) | 35-54 (157) | 55+ (154) | | high school (197) | some college (116) | college grad (106) | under \$10,000 (103) | \$10,000-\$19,999 (157) | \$20,000-\$34,999 (101) | \$35,000 and over (50) |
| NO | 76 | 73 | 77 | 74 | 76 | 77 | 79 | 72 | 77 | 78 | 69 | 78 | 71 | 78 |
| YES | 24 | 26 | 23 | 27 | 24 | 23 | 21 | 28 | 23 | 22 | 31 | 22 | 29 | 22 |

Table 26 illustrates the perception Montana adults had of violence in the preceding year. Nearly one-fourth of the adults (23%) had witnessed violence or became involved in a violent or potentially violent argument. Women and men in Montana perceived violence quite similarly. However, significantly more younger adults in the (18-34) age group witnessed violence (30%) as compared to older adults (55 and over) (17%).

TABLE 26 - VIOLENCE WITNESSED IN PAST YEAR

| Q. During the past year, how often did you witness or become involved in a violent or potentially violent argument? | | | | | |
|---|-------------------------|-------|------|-----------|----------|
| | (Number of respondents) | Never | Once | 2-3 Times | 4+ Times |
| Total Public | (486) | 76 | 11 | 8 | 4 |
| Sex | | | | | |
| Male | (178) | 78 | 14 | 6 | 3 |
| Female | (308) | 75 | 10 | 9 | 5 |
| Age | | | | | |
| 18-34 | (181) | 70 | 16 | 10 | 4 |
| 35-54 | (156) | 77 | 10 | 6 | 7 |
| 55+ | (146) | 83 | 8 | 8 | 1 |
| Education | | | | | |
| less than high school | (73) | 84 | 7 | 8 | 1 |
| high school | (194) | 74 | 12 | 9 | 5 |
| some college | (111) | 73 | 14 | 5 | 7 |
| college grad | (105) | 79 | 10 | 10 | 2 |
| Income | | | | | |
| under \$10,000 | (102) | 75 | 13 | 9 | 4 |
| \$10,000-\$19,999 | (154) | 76 | 13 | 7 | 4 |
| \$20,000-\$34,999 | (100) | 74 | 13 | 6 | 7 |
| \$35,000 and over | (89) | 71 | 8 | 16 | 4 |

Observations:

The socioeconomic impact of stress is no doubt tremendous; therefore, public health programs aimed at stress management should be a top priority. In fact, a 1978 Harris poll indicated that 34% of all American adults reported that they or someone in their family had experienced an emotional problem, nervous condition, stress or anxiety, which affected the physical health of the people concerned.¹ (This is considered a conservative estimate.)

Individuals or groups especially vulnerable to stress should be identified. Health providers and educators in turn can then use their knowledge and expertise in the emphasis of long term, life-enhancing coping mechanisms to facilitate the fulfillment of physical and emotional life-time goals.

¹ Pacific Mutual Life Insurance Survey, Louis Harris & Assoc., 1978, p.44.



Chapter 5

Nutrition

Food for the most part seems quite innocuous. Americans eat it with little concern other than whether it tastes good or not and satisfies one's hunger. Even though food supplies the needed calories and nutrients necessary for body metabolism and life functions, excessive food products or the lack of well-balanced meals may lead to the manifestation of communicable or chronic disease or disability or to overall increased susceptibility. For instance, obesity may increase the risk of certain chronic diseases such as heart disease, adult-onset diabetes, high blood pressure, dental caries and possibly some types of cancer.¹ Likewise, salt makes the food more palatable but excessive use may become a risk factor in the development of hypertension.

The breakfast frequency patterns for adult Montanans are illustrated in table 27. Frequently adults on the go have chosen to forego breakfast. However, research has found that eating breakfast daily is a health habit which contributes to longevity among adults.² In Montana, 62% of the adults reported eating breakfast almost every day. Similar percentages of males and females indicated eating breakfast. The tendency to eat breakfast increased with age from a low of 49% for the 18-34 age group to 83% for the 55 and over age group. College graduates (77%) reported the greatest tendency for breakfast and were followed by the non-high school graduates (73%). The lowest and highest income groups (approximately 67%) were more likely to eat breakfast than the two middle income groups.

TABLE 27 - BREAKFAST FREQUENCY

| Q. How often do you eat breakfast? | | | | | | | | | | | | | | |
|------------------------------------|--------------------|---------|---------|-------------|-------------|-----------|----------------------------|-------------------|--------------------|--------------------|----------------------|-------------------------|-------------------------|------------------------|
| (Number of respondents) | Sex | | | Age | | | | Education | | | Income | | | |
| | Total Public (500) | M (183) | F (317) | 18-34 (185) | 35-54 (158) | 55+ (154) | less than high school (77) | high school (197) | some college (117) | college grad (106) | under \$10,000 (101) | \$10,000-\$19,999 (157) | \$20,000-\$34,999 (101) | \$35,000 and over (50) |
| Almost Every Day | 62 | 61 | 62 | 49 | 57 | 83 | 73 | 54 | 56 | 77 | 67 | 63 | 57 | 66 |
| Sometimes | 15 | 14 | 15 | 23 | 13 | 7 | 7 | 16 | 21 | 11 | 13 | 13 | 19 | 12 |
| Rarely or Never | 23 | 23 | 23 | 28 | 30 | 10 | 21 | 31 | 23 | 11 | 20 | 24 | 24 | 22 |

¹ United States Government, Dept. of Health & Human Services, Promoting Health/Preventing Disease, Objectives for the Nation, Fall, 1980, p.73.

² Ohio Dept. of Health, Ohio Health Risk Prevalence Survey, 1982.

Table 28 indicates the vitamin/mineral supplement patterns for adult Montanans. 61% of the adults indicated taking vitamins at least occasionally. Of those, 43% took them regularly. Significantly more females (50%) than males (31%) took vitamins/minerals regularly. When age was considered, older adults were more likely to take a supplement on a regular basis than younger adults. It is interesting to note that of those who rarely or never took a supplement, the greatest percentage came from the 35-54 age group. As far as education was concerned, more education generally indicated supplement use on a more regular basis. When income was examined, those in the \$35,000 and over group tended to take vitamins either regularly or never but rarely on an occasional basis. However, those in the \$10,000-\$19,999 income level took supplements mostly on an occasional basis. Those in the lowest income level took vitamins the least. In general, those most likely to take vitamin/mineral supplements on a regular basis were females, individuals over 55, those with at least some higher education, and those who made \$35,000 and more. Those least likely to take supplements were males, those with less than a high school education, and those who made under \$10,000.

TABLE 28 - VITAMIN/MINERAL FREQUENCY

| Q. How often, if ever, do you currently take vitamins or mineral pills or supplements? | | | | | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|------|
| | Sex | | Age | | | less than high school | Education | | | Income | | | | |
| | Total Public | M | F | 18-34 | 35-54 | 55+ | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over | |
| (Number of respondents) | (500) | (183) | (317) | (185) | (158) | (154) | (77) | (197) | (117) | (106) | (103) | (157) | (101) | (50) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Regularly | 43 | 31 | 50 | 37 | 44 | 49 | 34 | 43 | 46 | 45 | 43 | 36 | 44 | 56 |
| Occasionally | 18 | 18 | 18 | 27 | 13 | 13 | 20 | 17 | 17 | 20 | 16 | 26 | 18 | 4 |
| Rarely or Never | 39 | 51 | 33 | 36 | 44 | 38 | 47 | 40 | 37 | 35 | 42 | 38 | 39 | 40 |

Sweets are considered to be a prime contributor in dental caries and obesity. In general, sweets are "empty calories" and only contribute to one's caloric intake. Table 29 illustrates the frequency of desserts or sweets among adult Montanans. Nearly three-fourths of adult Montanans (75%) ate sweets at least once per week and 29% ate sweets daily. A greater percent of females (76%) than males (73%) reported eating sweets at least once per week. The groups with greatest tendency to eat desserts or sweets daily were the 55 or older (36%), non-high school graduates (33%) and those in the \$10,000-\$19,999 income level (31%). The groups least likely to eat sweets on a daily basis were the adults who were 18-34 years of age (23%), non-college graduates (22%), and those in the \$20,000-\$34,999 income level (22%).

TABLE 29 - FREQUENCY OF DESSERTS OR SWEETS

| Q. How often do you eat desserts or sweets such as candy, cake, pastries, donuts, sweet rolls, etc.? | | | | | |
|--|-------------------------|-------|----------|--------------------|-----------------|
| | (Number of respondents) | Daily | 2+ Daily | At Least Once/Week | Never or Rarely |
| Total Public | (499) | 28 | 7 | 40 | 25 |
| Sex | | | | | |
| Male | (183) | 29 | 8 | 36 | 28 |
| Female | (316) | 27 | 7 | 42 | 24 |
| Age | | | | | |
| 18-34 | (184) | 23 | 5 | 42 | 29 |
| 35-54 | (158) | 26 | 9 | 37 | 28 |
| 55+ | (154) | 36 | 8 | 37 | 19 |
| Education | | | | | |
| less than high school | (77) | 33 | 4 | 36 | 27 |
| high school | (196) | 28 | 10 | 37 | 25 |
| some college | (117) | 22 | 6 | 44 | 27 |
| college grad | (106) | 31 | 7 | 41 | 22 |
| Income | | | | | |
| under \$10,000 | (103) | 25 | 7 | 45 | 23 |
| \$10,000-\$19,999 | (156) | 31 | 6 | 44 | 20 |
| \$20,000-\$34,999 | (101) | 22 | 7 | 37 | 35 |
| \$35,000 and over | (50) | 28 | 12 | 40 | 20 |

Another factor which contributes to obesity is eating between meal snacks. Table 30 illustrates data collected in this area. A vast majority (65%) indicated one or more snacks per day. Females (68%) were more likely than males (63%) to indulge in this past-time. Snacking decreased with age from a high of 76% of those 18-34 years old to a low of 54% for the group 55 and over. High school graduates (71%) were more likely to snack than any other group classified by education. Very similar patterns of snacking existed between the different income groups.

TABLE 30 - BETWEEN MEAL SNACKS

| Q. On the average, how many between meal snacks do you have each day? | | | | | | | | | |
|---|-------------------------|----|----|----|----|---|---|---|----|
| | (Number of respondents) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7+ |
| Total Public | (488) | 34 | 38 | 18 | 7 | 2 | 0 | 0 | 0 |
| Sex | | | | | | | | | |
| Male | (176) | 38 | 36 | 17 | 6 | 2 | 0 | 1 | 1 |
| Female | (312) | 31 | 39 | 19 | 7 | 2 | 1 | 0 | 0 |
| Age | | | | | | | | | |
| 18-34 | (181) | 24 | 38 | 23 | 10 | 3 | 1 | 1 | 1 |
| 35-54 | (156) | 33 | 43 | 14 | 6 | 3 | 1 | 1 | 0 |
| 55+ | (148) | 46 | 33 | 16 | 4 | 1 | 0 | 0 | 0 |
| Education | | | | | | | | | |
| less than high school | (76) | 36 | 40 | 16 | 5 | 1 | 1 | 1 | 0 |
| high school | (190) | 30 | 38 | 21 | 6 | 4 | 1 | 0 | 1 |
| some college | (115) | 37 | 42 | 15 | 5 | 0 | 0 | 1 | 0 |
| college grad | (104) | 37 | 33 | 18 | 11 | 2 | 0 | 0 | 0 |
| Income | | | | | | | | | |
| under \$10,000 | (102) | 36 | 39 | 16 | 6 | 1 | 0 | 1 | 1 |
| \$10,000-\$19,999 | (156) | 33 | 35 | 20 | 8 | 3 | 1 | 0 | 0 |
| \$20,000-\$34,999 | (98) | 33 | 40 | 13 | 8 | 4 | 1 | 0 | 1 |
| \$35,000 and over | (50) | 34 | 34 | 24 | 6 | 0 | 0 | 2 | 0 |

Table 31 illustrates the frequency of salty snacks in Montana. Snacks may contribute more than just calories; salty snacks increase the intake of sodium also. A relatively small (9%) of the adults surveyed reported eating salty snacks on a daily basis. Males (11%) more than females (7%) were the predominant users. The youngest age group (16%) were much more likely than the 55 and over age group (2%) to eat salty snacks on a daily basis. Some college (9%), high school graduates (9%), and college graduates (9%) were slightly more inclined to eat salty snacks on a daily basis than the non-high school graduate (7%). Similar patterns of daily salty snack intake exists for all income groups, except for the \$35,000 and over group (8%) which was the least likely to eat salty snacks on a daily basis. Another difference was that a larger percent of those in the \$35,000 and over group (64%) were more likely to eat salty snacks at least once per week compared to the other income levels.

TABLE 31 - FREQUENCY OF SALTY SNACKS

| Q. On the average, how often do you eat salty snacks like potato or corn chips, salted nuts, seeds or pretzels? | | | | | |
|---|-------------------------|-------|----------|--------------------|-----------------|
| | (Number of respondents) | Daily | 2+ Daily | At Least Once/Week | Never or Rarely |
| Total Public | (499) | 9 | 1 | 36 | 54 |
| Sex | | | | | |
| Male | (183) | 11 | 3 | 45 | 42 |
| Female | (316) | 7 | 1 | 31 | 61 |
| Age | | | | | |
| 18-34 | (185) | 16 | 2 | 36 | 45 |
| 35-54 | (158) | 6 | 1 | 48 | 45 |
| 55+ | (153) | 2 | 1 | 25 | 73 |
| Education | | | | | |
| less than high school | (77) | 7 | 0 | 26 | 68 |
| high school | (196) | 9 | 3 | 36 | 52 |
| some college | (117) | 9 | 0 | 43 | 48 |
| college grad | (106) | 9 | 2 | 37 | 53 |
| Income | | | | | |
| under \$10,000 | (103) | 9 | 0 | 32 | 59 |
| \$10,000-\$19,999 | (157) | 10 | 1 | 33 | 56 |
| \$20,000-\$34,999 | (101) | 9 | 3 | 40 | 49 |
| \$35,000 and over | (50) | 8 | 0 | 56 | 36 |

Table 32 indicates the number of Montana adults on a special diet. 15% of the adults reported some type of diet. A significantly greater percentage of females (19%) compared to males (8%) were on special diets. No definite trends emerged when adults were compared by age, education and income. As would be expected, the 18-34 age group (14%) was the least likely to be on a special diet, but the middle (16%) and oldest (16%) groups were very similar. In the less than high school group there were 8% on diets; however, some college consisted of 18% on special diets. The under \$10,000 income group (14%) and over \$35,000 (14%) were similar in percent on special diets but the \$20,000-\$34,999 (21%) consisted of the highest percentage of dieters.

| Q. Are you on a special diet or weight reduction diet? | | | | | | | | | | | | | | |
|--|--------------|-----|----|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| (Number of respondents) | (499) | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | | | | (185) | (158) | (153) | (77) | (197) | (116) | (106) | (103) | (157) | (100) | (50) |
| NO | 85 | 92 | 81 | 87 | 84 | 84 | 92 | 84 | 82 | 87 | 86 | 85 | 79 | 86 |
| YES | 15 | 8 | 19 | 14 | 16 | 16 | 8 | 16 | 18 | 13 | 14 | 15 | 21 | 14 |

Good nutrition is vital to one's well-being and health promotion. Yet, because nutrition is a relatively new field and much research has yet to be undertaken, adults become confused by what is good information. A desire to make sense of the conflicting reports has resulted in nutrition books frequenting the best seller lists. The findings on nutrition information are displayed in table 33.

In Montana, the most popular source of nutrition information for adults is the popular press -- books and magazines (54%). The ranking of the other sources was radio, T.V., newspaper, (48%); medical doctors (36%); other health professionals (19%); other sources (12%); and naturopaths, diet centers (7%). Similar patterns emerged for the various areas grouped by sex, age, education and income. One notable exception was that the predominant percentage of the 55 and over group relied more on radio, T.V., newspapers followed by the popular books and magazines than younger groups. The other variation was that those with less than a high school education tended to rely first on medical doctors, then on radio, T.V., and newspapers, followed by the popular press.

For all the sources of information, more women than men used them and the \$35,000 and over were the predominant users. The use of radio, T.V., and newspapers, and medical doctors increased with age, while the use of magazines and popular books decreased with age. More educated survey respondents were likely to get information from popular books and magazines, as well as through the media, and other health professionals. Either college graduates or those with some college were more apt to be seekers of nutrition information as they were predominant users of all the sources.

TABLE 33 - SOURCES OF NUTRITION INFORMATION

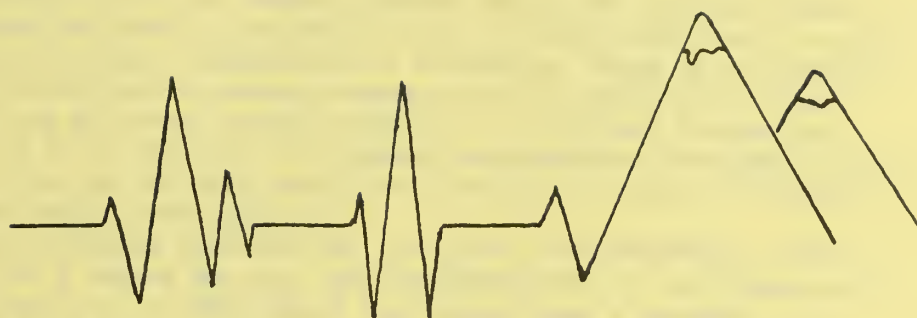
| Q. Where do you get your information on nutrition? | | | | | | | |
|--|-------------------------|----------------------------|-----------------------|-----------|----------------------------|-----------------------------|----------------------|
| | (Number of respondents) | Popular Books or Magazines | Radio, TV, News-Paper | Physician | Other Health Professionals | Naturopaths or Diet Centers | Other (See Appendix) |
| Total Public | (500) | 54 | 48 | 36 | 19 | 7 | 12 |
| Sex | | | | | | | |
| Male | (183) | 37 | 38 | 27 | 14 | 3 | 7 |
| Female | (317) | 64 | 55 | 41 | 22 | 9 | 14 |
| Age | | | | | | | |
| 18-34 | (185) | 57 | 42 | 28 | 18 | 6 | 14 |
| 35-54 | (158) | 56 | 50 | 37 | 20 | 12 | 13 |
| 55+ | (154) | 49 | 52 | 43 | 19 | 3 | 8 |
| Education | | | | | | | |
| less than high school | (77) | 34 | 38 | 39 | 14 | 4 | 12 |
| high school | (197) | 53 | 43 | 31 | 12 | 8 | 12 |
| some college | (117) | 55 | 53 | 41 | 25 | 8 | 10 |
| college grad | (108) | 70 | 60 | 38 | 27 | 6 | 14 |
| Income | | | | | | | |
| under \$10,000 | (103) | 55 | 52 | 38 | 16 | 6 | 16 |
| \$10,000-\$19,999 | (197) | 53 | 48 | 34 | 20 | 5 | 14 |
| \$20,000-\$34,999 | (101) | 55 | 39 | 31 | 18 | 12 | 9 |
| \$35,000 and over | (50) | 60 | 54 | 40 | 22 | 12 | 14 |

Observations:

Nutrition is a vital aspect of disease prevention and health promotion. In a recent national survey, fully 67% of all American adults recognized that they would be healthier if they made some changes in their diets.¹ The main reasons people eat the foods they do, even though they know they would be healthier if they didn't, are that they like what they eat, they eat out of habit, and they lack self-discipline or willpower to change.¹

The role of public health authorities is to help provide important insights into nutrition which may then help people make better food choices in order to enhance their prospects for maintaining health and preventing disease. In the 1978 Harris survey, four policies for changing eating habits were considered, and the one with the greatest potential was the input doctors could have on this area. In fact, fully 57% of all Americans said that it would be very effective if their doctor were to tell them which foods to cut out and which foods to add to their diets.¹ It cannot be overly emphasized that there is increasing evidence of the tremendous potential doctors and other health professionals can have on the lifestyles of the American public as well as the people of Montana in helping promote health and prevent disease.

¹ Pacific Mutual Life Insurance Survey, Louis Harris and Assoc., 1978 pp. 32 and 36.



Chapter 6

Drinking (Alcohol)

Most adults consider alcohol a beverage rather than a drug that depresses the nervous system or that may eventually harm the liver or other organs of the body. In fact, "alcohol has pervasive effects: biological, psychological and social; psychological and social effects on family members and others; increased risk of injury and death to self, family members and others (especially by accidents, fires or violence); and derivative social and economic consequences for society at large."¹

Estimates of the problems alcohol causes are oftentimes staggering. For instance, in 1975, the costs of alcohol problems were estimated to be \$43 billion in lost production, health and medical services, accidents, crime and other social consequences.¹

Even though clinical research has concluded that moderate alcohol consumption (1 or 2 drinks per day) may be beneficial or contribute to wellness and longevity, alcohol abuse has always been a problem with which societies have had to deal.

Table 34 illustrates the percent of Montana adults who consume alcoholic beverages. 71% of adults in the state drank alcohol. Many more males (80%) than females (65%) indicated they drank. There was an increased tendency for the young to drink as compared to the old, as 80% of the 18-34 age group and only 57% of the 55 and over age group currently drank alcohol. The highest percentage of individuals, grouped by education, who drank were the high school graduates (76%) followed by the college graduates (73%). Income correlated directly with the percent of drinkers and ranged from a low of 60% for the under \$10,000 group to 80% for the over \$35,000 income group.

TABLE 34 - DRINK ALCOHOL

| Q. Do you ever drink alcoholic beverages - that is, beer, wine, or liquor? | | | | | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| (Number of respondents) | Sex | | Age | | | | Education | | | | Income | | | |
| | Total Public | M | F | 18-34 | 35-54 | 55+ | less than high school | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | (500) | (183) | (317) | (185) | (158) | (154) | (77) | (197) | (117) | (106) | (103) | (157) | (101) | (50) |
| NO | 29 | 20 | 35 | 21 | 26 | 44 | 39 | 24 | 34 | 27 | 40 | 26 | 21 | 12 |
| YES | 71 | 80 | 65 | 80 | 74 | 57 | 61 | 76 | 66 | 73 | 60 | 74 | 79 | 88 |

Table 35 indicates the frequency of alcohol consumption. 7% of Montana adults who drink alcohol do so every day. Nearly 17% of those surveyed reported drinking 3 or more days per week. Males (25%) were twice as likely as females (12%) to drink three or more days a week. Although the adults 55 and over generally were not as likely to drink as their younger fellow Montanans, those that drank alcohol were approximately four times more likely to drink daily as compared to the 18-34 age group. Daily drinking was more prevalent in the non-college graduate (13%) and the \$20,000-\$34,999 income group (10%).

TABLE 35 - FREQUENCY OF ALCOHOL CONSUMPTION

(Base: current alcohol consumer)

| Q. On the average, how often do you drink alcoholic beverages? | | | | | | |
|--|-------------------------|-----------|---------------|---------------|----------------|----------------------|
| | (Number of respondents) | Every Day | 3-6 days/week | 1-2 days/week | 1-3 days/month | Less Than Once/Month |
| Total Public | (350) | 7 | 10 | 28 | 28 | 27 |
| Sex | | | | | | |
| Male | (145) | 10 | 15 | 36 | 26 | 15 |
| Female | (205) | 5 | 7 | 22 | 30 | 36 |
| Age | | | | | | |
| 18-34 | (146) | 3 | 9 | 32 | 35 | 21 |
| 35-54 | (116) | 6 | 10 | 28 | 24 | 31 |
| 55+ | (86) | 14 | 12 | 21 | 21 | 33 |
| Education | | | | | | |
| less than high school | (47) | 6 | 11 | 23 | 28 | 32 |
| high school | (147) | 4 | 7 | 29 | 29 | 31 |
| some college | (77) | 13 | 8 | 26 | 27 | 26 |
| college grad | (77) | 7 | 18 | 33 | 25 | 18 |
| Income | | | | | | |
| under \$10,000 | (61) | 5 | 10 | 23 | 25 | 38 |
| \$10,000-\$19,999 | (115) | 6 | 8 | 26 | 36 | 24 |
| \$20,000-\$34,999 | (80) | 10 | 14 | 26 | 29 | 21 |
| \$35,000 and over | (44) | 7 | 14 | 39 | 21 | 21 |

Table 36 illustrates the drinking pattern now versus two years ago for Montana adults who drink. In general, there is a trend toward decreased drinking by adults as 43% indicated a reduction in their drinking compared with two years earlier. Even more encouraging is to note that 89% have not increased their consumption at all (i.e., they are at or below the level they were two years earlier). Significantly more females (54%) showed no change in alcoholic consumption as compared with males (35%). In other words, over half the males (53%) reported drinking less as compared to only (36%) of the females. Other groups which reported reduction in drinking alcohol occurred in the 18-34 year olds (51%) and non-high school graduates (51%). The income group with the greatest reduction was the \$35,000 and over group (48%). The groups, on the other hand, which were more inclined to indicate an increase in drinking were the 18-34 year olds (19%), some college (16%), and under \$10,000 (16%).

TABLE 36 - DRINKING NOW VERSUS TWO YEARS AGO

(Base: Current alcohol consumer)

| Q. Do you now drink more or less than you did two years ago? | | | | | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| (Number of respondents) | Sex | | | Age | | | | Education | | | Income | | | |
| | Total Public | M | F | 18-34 | 35-54 | 55+ | less than high school | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | (351) | (146) | (205) | (146) | (116) | (87) | (47) | (149) | (76) | (77) | (62) | (115) | (79) | (44) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| More | 11 | 12 | 10 | 19 | 5 | 6 | 13 | 9 | 16 | 9 | 16 | 15 | 6 | 9 |
| Less | 43 | 53 | 36 | 51 | 36 | 38 | 51 | 38 | 43 | 48 | 42 | 44 | 38 | 48 |
| No Change | 46 | 35 | 54 | 30 | 59 | 56 | 36 | 53 | 41 | 43 | 42 | 42 | 56 | 43 |

Table 37 indicates how many times adults who drank alcohol consumed five or more drinks per occasion. During the month prior to the survey, nearly three-fourths of drinking Montanans had consumed five or more drinks on at least two occasions. Males tended to drink more heavily more frequently than females. This pattern of high alcohol consumption when grouped according to age, education, and income, was more likely to occur in the following groups: 18-34 (11%), college graduates (17%), and under \$10,000 income (14%).

TABLE 37 - FIVE OR MORE DRINKS PER OCCASION

(Base: current alcohol consumer)

| Q. How many times during the past month did you have 5 or more drinks on an occasion? | | | | | | | |
|---|-------------------------|----|----|----|----|----|----|
| | (Number of respondents) | 1 | 2 | 3 | 4 | 5 | 6+ |
| Total Public | (113) | 40 | 33 | 7 | 9 | 4 | 8 |
| Sex | | | | | | | |
| Male | (72) | 35 | 35 | 8 | 8 | 1 | 13 |
| Female | (41) | 49 | 29 | 5 | 10 | 7 | 0 |
| Age | | | | | | | |
| 18-34 | (75) | 35 | 39 | 5 | 7 | 4 | 11 |
| 35-54 | (27) | 44 | 22 | 15 | 15 | 0 | 4 |
| 55+ | (11) | 64 | 18 | 0 | 9 | 9 | 0 |
| Education | | | | | | | |
| less than high school | (13) | 39 | 31 | 15 | 0 | 0 | 15 |
| high school | (53) | 40 | 38 | 2 | 11 | 4 | 6 |
| some college | (24) | 42 | 29 | 8 | 13 | 8 | 0 |
| college grad | (23) | 39 | 26 | 13 | 4 | 0 | 17 |
| Income | | | | | | | |
| under \$10,000 | (21) | 33 | 33 | 0 | 10 | 10 | 14 |
| \$10,000-\$19,999 | (38) | 47 | 29 | 5 | 11 | 3 | 5 |
| \$20,000-\$34,999 | (31) | 36 | 29 | 16 | 7 | 3 | 10 |
| \$35,000 and over | (13) | 46 | 31 | 8 | 8 | 0 | 8 |

The major immediate risk of alcohol consumption is getting behind the wheel of a motor vehicle after drinking. Table 38 indicates drinking and driving patterns among adult alcohol consumers in the state. Nearly one-fourth of the adults indicated that they had driven a car at least once after drinking "a good bit." More males (38%) than females (16%) subjected themselves and others to this risky practice at least once. Again, the young (40%) were significantly more likely to imbibe and drive than the older Montanan. While this trend was distributed nearly evenly across the education groups, those with some college (26%) were slightly more likely to drive after drinking "a good bit." A similar distribution was found among the income groups with the \$10,000-\$19,999 level in which 31% were more likely to be at risk than the other income levels.

TABLE 38 - DRINKING AND DRIVING
(Base: current alcohol consumer)

| Q. During the past year, how many times have you driven a car when you've had a good bit to drink? | | | | | | | | |
|--|-------------------------|-------|------|-----------|-----------|-----------|-----------|-------------|
| | (Number of respondents) | Never | Once | 2-3 times | 4-5 times | 6-9 times | 10+ times | Don't Drive |
| Total Public | (348) | 73 | 10 | 10 | 2 | 1 | 1 | 3 |
| Sex | | | | | | | | |
| Male | (142) | 61 | 12 | 16 | 6 | 1 | 3 | 1 |
| Female | (206) | 81 | 8 | 6 | 0 | 1 | 1 | 3 |
| Age | | | | | | | | |
| 18-34 | (145) | 59 | 15 | 17 | 3 | 2 | 3 | 1 |
| 35-54 | (117) | 80 | 9 | 6 | 3 | 0 | 1 | 2 |
| 55+ | (85) | 86 | 2 | 4 | 0 | 1 | 0 | 7 |
| Education | | | | | | | | |
| less than high school | (47) | 75 | 15 | 2 | 0 | 2 | 4 | 2 |
| high school | (146) | 75 | 8 | 10 | 3 | 1 | 1 | 2 |
| some college | (77) | 69 | 10 | 13 | 3 | 0 | 0 | 5 |
| college grad | (76) | 71 | 11 | 12 | 1 | 1 | 3 | 1 |
| Income | | | | | | | | |
| under \$10,000 | (62) | 76 | 10 | 10 | 3 | 0 | 0 | 2 |
| \$10,000-\$19,999 | (114) | 68 | 14 | 9 | 4 | 2 | 2 | 3 |
| \$20,000-\$34,999 | (80) | 73 | 9 | 10 | 1 | 3 | 3 | 3 |
| \$35,000 and over | (44) | 73 | 2 | 18 | 2 | 0 | 2 | 2 |

Table 39 indicates heavy drinking and driving patterns among adult alcohol consumers in the state. Overall, 35% of adults who drank have driven a motor vehicle at least once in the past year after having at least 6 drinks in two hours. More males (48%) have done so as compared to females (15%). Those 35-54 had the greatest tendency to drink and drive (53%) as compared with 0% of those age 55 and over. When education and income is examined, the highest likelihood of drinking and driving is among high school graduates (45%) and those with a family income of under \$10,000 (47%).

TABLE 39 - DRIVING AFTER SIX DRINKS IN TWO HOURS

(Base: current alcohol consumer)

| Q. More specifically, during the past year, have you ever driven a motor vehicle after having at least six drinks in two hours? | | | | | | | |
|---|-------------------------|-------|------|-----------|-----------|-----------|-----------|
| | (Number of respondents) | Never | Once | 2-3 Times | 4-5 Times | 6-9 Times | 10+ times |
| Total Public | (88) | 65 | 14 | 15 | 1 | 2 | 3 |
| Sex | | | | | | | |
| Male | (55) | 53 | 16 | 22 | 2 | 4 | 4 |
| Female | (33) | 85 | 9 | 3 | 0 | 0 | 3 |
| Age | | | | | | | |
| 18-34 | (58) | 66 | 10 | 16 | 2 | 3 | 3 |
| 35-54 | (21) | 48 | 29 | 19 | 0 | 0 | 5 |
| 55+ | (9) | 100 | 0 | 0 | 0 | 0 | 0 |
| Education | | | | | | | |
| less than high school | (11) | 64 | 9 | 9 | 0 | 0 | 18 |
| high school | (34) | 56 | 15 | 21 | 3 | 3 | 3 |
| some college | (21) | 67 | 19 | 14 | 0 | 0 | 0 |
| college grad | (22) | 77 | 9 | 9 | 0 | 5 | 0 |
| Income | | | | | | | |
| under \$10,000 | (15) | 53 | 20 | 27 | 0 | 0 | 0 |
| \$10,000-\$19,999 | (35) | 69 | 17 | 6 | 0 | 3 | 6 |
| \$20,000-\$34,999 | (21) | 62 | 5 | 24 | 5 | 5 | 0 |
| \$35,000 and over | (11) | 55 | 18 | 18 | 0 | 0 | 9 |

Table 40 illustrates those warned about drinking in the past year. An average of only 2% of the drinking Montanans have ever been told that drinking is injuring their health. The groups more inclined to have been warned include males (3%), those 55 and over (3%), those with less than a high school education (4%), and those with an income under \$10,000 (3%). None of the individuals between 35-54 or the college graduates indicated being warned by a physician or other health professional. These findings may be underestimated due to the sensitive nature of the question.

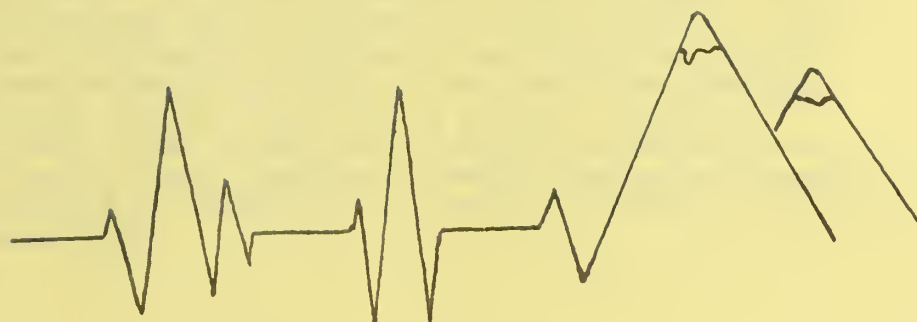
TABLE 40 - WARNED ABOUT DRINKING IN PAST YEAR

(Base: Current alcohol consumer)

| Q. In the last year, has a physician or other health professional ever told you that drinking is injuring your health? | | | | | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| | | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| (Number of respondents) | (351) | (145) | (206) | (147) | (116) | (86) | (47) | (148) | (77) | (77) | (62) | (116) | (80) | (43) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| NO | 98 | 97 | 99 | 98 | 100 | 97 | 96 | 99 | 97 | 100 | 97 | 99 | 99 | 98 |
| YES | 2 | 3 | 1 | 2 | 0 | 3 | 4 | 1 | 3 | 0 | 3 | 1 | 1 | 2 |

Observations:

Alcohol abuse is a problem which permeates all aspects of society. Health education/risk reduction efforts aimed at reducing alcohol consumption should emphasize individual self-determination in the process. Individuals must be convinced that alcohol abuse is a serious health hazard for their health as well as the well-being of society around them. Moderate alcohol consumption is felt to be beneficial, but it is the heavy alcohol abuse which is harmful. If controlled, it can be a positive lifestyle change enhancing health promotion and disease prevention.



Chapter 7

Diabetes

Diabetes is a diagnostic term used to refer to a "genetically and clinically heterogeneous group of disorders that share glucose intolerance in common."¹ In 1979, an estimated 5.2 million people or 2.4% of the population of the United States were known to have diabetes.² Furthermore, the prevalence of known diabetes is increasing as a result of improvements both in detection of diabetes among high risk groups (women, blacks, less educated, low family income) and in survivorship among persons with the disorder.² Diabetes is currently the sixth leading cause of death in the United States.³ Long term complications include coronary heart disease, peripheral vascular disease and diseases of the eyes and kidney.⁴ The prevalence of diabetes in Montana and related issues are presented below.

Table 41 illustrates the prevalence of diabetes in relatives of survey respondents. A greater prevalence was reported for mothers (8%) than fathers (4%) of the respondents. However, 5% had brothers or sisters with diabetes and 17% reported other relatives. A slight tendency existed for a greater percent of males to indicate mothers with diabetes and for females to indicate fathers with diabetes. The prevalence of those surveyed with diabetic children was only 2%. As educational levels and income increased, so did the percent of people reporting diabetes in fathers. However, as education increased there was also a decreased prevalence of diabetes in children of respondents.

¹
National Diabetes Data Group, 1979

²
United States Government, Dept. of Health & Human Services, PHS, Office of Health Research, Statistics and Technology, Health-United States, 1981.
Pub # (PHS) 82-1232., pp. 25-31.

³
National Center for Health Statistics (NCHS) Survey, 1980.

⁴
National Diabetes Data Group, 1978.

TABLE 41 - DIABETIC RELATIVES

| Q. Do you have a family member with diabetes? | | | | | | |
|---|-------------------------|--------|--------|-------------------|----------|----------------------|
| | (Number of respondents) | Father | Mother | Brother or Sister | Children | Other Blood Relative |
| Total Public | (495) | 4 | 8 | 5 | 2 | 17 |
| Sex | | | | | | |
| Male | (179) | 4 | 8 | 7 | 1 | 12 |
| Female | (316) | 4 | 8 | 4 | 3 | 19 |
| Age | | | | | | |
| 18-34 | (183) | 2 | 5 | 1 | 0 | 23 |
| 35-54 | (158) | 8 | 10 | 6 | 2 | 18 |
| 55+ | (152) | 4 | 9 | 9 | 4 | 7 |
| Education | | | | | | |
| less than high school | (77) | 1 | 8 | 9 | 4 | 12 |
| high school | (195) | 4 | 9 | 5 | 2 | 20 |
| some college | (115) | 4 | 6 | 3 | 1 | 16 |
| college grad | (106) | 8 | 7 | 6 | 1 | 15 |
| Income | | | | | | |
| under \$10,000 | (102) | 3 | 8 | 6 | 5 | 17 |
| \$10,000-\$19,999 | (156) | 3 | 8 | 5 | 1 | 19 |
| \$20,000-\$34,999 | (100) | 7 | 7 | 4 | 1 | 21 |
| \$35,000 and over | (50) | 10 | 12 | 6 | 2 | 14 |

Table 42 indicates who has been warned of diabetes in Montana. Of the Montanans surveyed, 7% reported being told they had diabetes or were warned about their high blood sugar level. Females (8%) were twice as likely as males (4%) to have been warned. Age correlated directly with the prevalence of either being told or warned of diabetes, as the percent increased from a low among the 18-34 (3%) to a high among the 55 and older (13%). College graduates (10%) and some college (9%) had the higher prevalences: the lower prevalences were in the high school (4%) and less than high school (7%). A trend of decreasing prevalence was found for income. The highest prevalence was 8% for the less than \$10,000 group and the lowest was 2% in the \$35,000+ group.

TABLE 42 - EVER WARNED OF DIABETES

| Q. Have you ever been told that you have diabetes or that your blood sugar level is too high? | | | | | | | | | | | | | | |
|---|--------------|-------|-------|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| | Sex | | | Age | | | less than high school | Education | | | Income | | | |
| | Total Public | M | F | 18-34 | 35-54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| (Number of respondents) | (500) | (183) | (317) | (185) | (158) | (154) | (77) | (197) | (117) | (106) | (103) | (157) | (101) | (50) |
| NO | 93 | 96 | 92 | 97 | 95 | 87 | 94 | 96 | 92 | 90 | 92 | 93 | 94 | 98 |
| YES | 7 | 4 | 8 | 3 | 5 | 13 | 7 | 4 | 9 | 10 | 8 | 7 | 6 | 2 |

Table 43 illustrates that 100% of the survey respondents with diabetes had it detected by a physician.

TABLE 43 - WHO IDENTIFIED DIABETES

(Base: current diabetic)

| Q. By whom were you told that you have diabetes? | | | | | | | | | | | | | | |
|--|-----------------|-----|------|-----------|-----------|------|--------------------------------|----------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------------|
| (Number of respondents) | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| | | M | F | 18- 34 | 35- 54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000- \$19,999 | \$20,000- \$34,999 | \$35,000 and over |
| | (33) | (7) | (26) | (5) | (8) | (20) | (5) | (7) | (10) | (11) | (8) | (11) | (6) | (1) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Doctor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Nurse | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 44 indicates those individuals with current diabetes in the state. Of the thirty-three Montanans who indicated being warned of high blood sugar or diabetes, twenty-nine responded on to the question, "Are you diabetic now?" Nearly half (41%) indicated they were current diabetics. Therefore, the prevalence rate of diabetes in the state of Montana was 2% which compares with 2.4% nationally.¹ More males (50%) indicated current diabetes than females (39%).

TABLE 44 - CURRENT DIABETIC

(Base: previous or current diabetic)

| Q. Are you diabetic now? | | | | | | | | | | | | | | |
|--------------------------|-----------------|-----|------|-----------|-----------|------|--------------------------------|----------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------------|
| (Number of respondents) | Total Public | Sex | | Age | | | less than high school | Education | | | Income | | | |
| | | M | F | 18- 34 | 35- 54 | 55+ | | high school | some college | college grad | under \$10,000 | \$10,000- \$19,999 | \$20,000- \$34,999 | \$35,000 and over |
| | (29) | (6) | (23) | (3) | (8) | (18) | (5) | (7) | (7) | (10) | (7) | (9) | (6) | (1) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| NO | 59 | 50 | 61 | 33 | 75 | 56 | 60 | 29 | 86 | 60 | 29 | 78 | 67 | 100 |
| YES | 41 | 50 | 39 | 67 | 25 | 44 | 40 | 71 | 14 | 40 | 71 | 22 | 33 | 0 |

1

Table 45 illustrates diabetic treatment data. Of the fifteen respondents who indicated being current diabetics, 87% reported being on a treatment program. In nearly all groups, the range of the percent of current diabetics in treatment places was 67% and up.

TABLE 45 - DIABETIC TREATMENT PRESCRIBED
(Base: current diabetic)

| Q. Has any treatment ever been prescribed for your diabetes? | | | | | | | | | | | | | | |
|--|--------------|-----|------|-------|-------|------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| (Number of respondents) | Total Public | Sex | | Age | | | less than high school | high school | some college | college grad | Income | | | |
| | (15) | M | F | 18-34 | 35-54 | 55+ | (2) | (5) | (3) | (5) | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | (15) | (4) | (11) | (3) | (2) | (10) | (2) | (5) | (3) | (5) | (6) | (3) | (2) | (0) |
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| NO | 13 | 25 | 9 | 33 | 0 | 10 | 0 | 0 | 33 | 20 | 17 | 0 | 0 | 0 |
| YES | 87 | 75 | 91 | 67 | 100 | 90 | 100 | 100 | 67 | 80 | 83 | 100 | 100 | 0 |

Table 46 indicates treatment modalities for diabetes. The treatment programs that were surveyed were special diet, pills, insulin shots, and other. The rank order was diet (92%), pills (69%), insulin shots (39%), and other treatment (8%). Generally, females reported being treated more overall than males.

TABLE 46 - DIABETIC TREATMENT
(Base: Current diabetic)

| Q. What treatment was prescribed for your diabetes? | | | | | |
|---|-------------------------|---------------|-------|------|----------------------|
| | (Number of respondents) | Insulin Shots | Pills | Diet | Other (See Appendix) |
| Total Public | (13) | 39 | 69 | 92 | 8 |
| Sex | | | | | |
| Male | (3) | 33 | 67 | 10 | 0 |
| Female | (10) | 40 | 70 | 90 | 10 |
| Age | | | | | |
| 18-34 | (2) | 0 | 100 | 100 | 0 |
| 35-54 | (2) | 100 | 50 | 100 | 50 |
| 55+ | (9) | 33 | 67 | 89 | 0 |
| Education | | | | | |
| less than high school | (2) | 0 | 100 | 100 | 0 |
| high school | (5) | 20 | 60 | 80 | 20 |
| some college | (2) | 100 | 50 | 100 | 0 |
| college grad | (4) | 50 | 75 | 100 | 0 |
| Income | | | | | |
| under \$10,000 | (5) | 40 | 80 | 100 | 20 |
| \$10,000-\$19,999 | (3) | 100 | 33 | 100 | 0 |
| \$20,000-\$34,999 | (2) | 0 | 50 | 100 | 0 |
| \$35,000 and over | (0) | 0 | 0 | 0 | 0 |

Table 47 illustrates sources of diabetes information. The doctor's office (75%) was the main source of information on diabetes for people at risk. The rank order of other sources was diabetes association (28%), hospital ((25%), other sources (25%), pharmacist (6%), and public health department (3%).

TABLE 47 - SOURCE OF DIABETES INFORMATION
(Base: current diabetic)

| Q. Where do you get your information on diabetes? | | | | | | | | | | | | | | |
|---|-------------------------|----------|-----------|------------------|------------------|-------------|---------------------------------------|-----------------------|------------------------|-------------------------|--------------------------|-------------------------------|------------------------------|-----------------------------|
| (Number of respondents) | Total Public (32) | Sex | | Age | | | less than high school (5) | Education | | | Income | | | |
| | | M (7) | F (25) | 18- 34 (4) | 35- 54 (8) | 55+ (20) | | high school (7) | some college (9) | college grad (11) | under \$10,000 (8) | \$10,000- \$19,999 (10) | \$20,000- \$34,999 (6) | \$35,000 and over (1) |
| Doctor's Office | 75 | 71 | 76 | 50 | 50 | 90 | 100 | 71 | 44 | 91 | 75 | 70 | 50 | 100 |
| Hospital | 25 | 14 | 28 | 25 | 0 | 35 | 80 | 0 | 11 | 27 | 25 | 30 | 0 | 0 |
| Public Health Dept. | 3 | 0 | 4 | 0 | 0 | 5 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pharmacist | 6 | 0 | 8 | 0 | 13 | 5 | 20 | 0 | 0 | 9 | 13 | 0 | 0 | 100 |
| Diabetes Association | 28 | 29 | 28 | 25 | 38 | 25 | 20 | 43 | 11 | 36 | 38 | 20 | 17 | 100 |
| Other (See Appendix) | 25 | 29 | 24 | 25 | 50 | 15 | 0 | 14 | 33 | 36 | 25 | 40 | 17 | 100 |

Observations:

There has been a six-fold increase in the number of cases of detected diabetes in the past 45 years.¹ Moreover, it is felt that there may be a large number of undiagnosed cases of diabetes in the population as well, possibly as many as there are diagnosed cases.¹ Care and management of diabetes are essential because no known cure exists. Oftentimes diet, exercise and insulin or oral hypoglycemic agents comprise the essentials of treatment but must be balanced in the dynamic context of a diabetic's personal, social, and medical situation.² Preventive health services and patient knowledge are very important since health care of diabetes is largely self-care.

Nationally, about 58% of all adult diabetics have less than 12 years of formal education. This information is highly important for health education/risk reduction programs in this area. "More educational materials are needed that can be understood by people with little formal schooling."¹ In the management of diabetes it is usually those individuals who have less than a high school education who either lack the knowledge to comply with recommended treatment procedures or who lack the understanding to comply.

¹ U.S. Gov't, Dept. of Health & Human Services, PHS, Office of Health Research, Statistics, and Technology, Health-United States, 1981. Pub # (PHS) 82-1232, pp. 25-31.

² Krall, L.R., ed.: Joslin Diabetes Manual, 11th ed. Phila. Lea and Febinger, 1978.



Chapter 8

General Health & Safety

Health is a broad concept but to most individuals it generally implies the absence of disease. This wellness concept takes into account the ability to enhance living and is a broader definition which cradles dimensions of life hitherto given little consideration under the umbrella of health. The general health and safety of Montanans is included in public health enhancement and will be examined more closely in this section.

Table 48 illustrates Montanan's self evaluation of health. The vast majority (86%) of Montanans rated their health as "good" (52%) or "excellent" (34%). Males and females rated their health similarly with more women (35%) than men (31%) rating themselves as excellent and more men (55%) than women (50%) rating themselves as "good". As would be expected, as age increased fewer people ranked themselves in "good" or "excellent" health. Some college (91%) and college graduates (89%) were more inclined to indicate better health than groups with a high school education or less. A positive correlation was found between income and ranking of health. The groups that tended to indicate "fair" or "good" health were the less than high school (29%) and the under \$10,000 income group (25%).

TABLE 48 - SELF EVALUATION OF HEALTH

| Q. How would you judge your own health? | | | | | |
|---|-------------------------|-----------|------|------|------|
| | (Number of respondents) | Excellent | Good | Fair | Poor |
| Total Public | (499) | 34 | 52 | 12 | 2 |
| Sex | | | | | |
| Male | (183) | 31 | 55 | 12 | 2 |
| Female | (316) | 35 | 50 | 12 | 3 |
| Age | | | | | |
| 18-34 | (185) | 37 | 54 | 9 | 0 |
| 35-54 | (158) | 42 | 46 | 10 | 1 |
| 55+ | (153) | 21 | 55 | 18 | 7 |
| Education | | | | | |
| less than high school | (76) | 22 | 49 | 21 | 8 |
| high school | (197) | 32 | 55 | 12 | 2 |
| some college | (117) | 36 | 55 | 9 | 1 |
| college grad | (106) | 44 | 45 | 10 | 0 |
| Income | | | | | |
| under \$10,000 | (103) | 23 | 52 | 21 | 4 |
| \$10,000-\$19,999 | (157) | 30 | 60 | 10 | 0 |
| \$20,000-\$34,999 | (101) | 46 | 43 | 9 | 3 |
| \$35,000 and over | (50) | 56 | 38 | 4 | 2 |

Table 49 indicates the frequency of dental checkups among adults in the state. Of those surveyed, 58% reported going to the dentist at least once a year and only 2% reported never going. More females (61%) were conscientious on yearly visits to the dentist than males (50%). Yearly visits were significantly less among the older Montanans (40%) than the 35-54 group (65%) and 18-34 group (65%). The less educated (30%) and under \$10,000 groups (52%) were less apt to have yearly visits to the dentist. A gradual increase was noted with the high among the college graduates (69%) and the \$35,000 and over income group (77%).

TABLE 49 - TIME SINCE LAST DENTAL CHECKUP

| Q. How long ago did you last see a dentist for a checkup (not to fill a cavity or take care of a specific problem)? | | | | | | |
|---|-------------------------|-------|----------------|-----------------|---------------|--------------|
| | (Number of respondents) | Never | 0-6 Months Ago | 7-12 Months Ago | 1-2 Years Ago | 2+ Years Ago |
| Total Public | (490) | 2 | 36 | 22 | 17 | 23 |
| Sex | | | | | | |
| Male | (182) | 2 | 31 | 19 | 21 | 27 |
| Female | (308) | 3 | 38 | 23 | 15 | 21 |
| Age | | | | | | |
| 18-34 | (185) | 1 | 40 | 25 | 21 | 14 |
| 35-54 | (154) | 1 | 43 | 22 | 16 | 18 |
| 55+ | (148) | 6 | 23 | 17 | 14 | 40 |
| Education | | | | | | |
| less than high school | (74) | 5 | 18 | 12 | 19 | 46 |
| high school | (194) | 2 | 33 | 24 | 17 | 24 |
| some college | (114) | 2 | 42 | 24 | 17 | 16 |
| college grad | (105) | 2 | 47 | 22 | 16 | 13 |
| Income | | | | | | |
| under \$10,000 | (99) | 4 | 31 | 21 | 12 | 31 |
| \$10,000-\$19,999 | (157) | 2 | 35 | 17 | 18 | 28 |
| \$20,000-\$34,999 | (100) | 4 | 35 | 26 | 19 | 16 |
| \$35,000 and over | (49) | 0 | 59 | 18 | 20 | 2 |

As we shall see, adults in Montana do not practice the seat belt behavior as much as they should, however, more adult Montanans were concerned about the safety of young children. Table 50 indicates the frequency of child restraint use in the state. Of the adults with children, 37% always or usually used child restraints. More women (42%) with children were more likely to utilize restraints for children than men (28%). More 18-34 year olds (44%) than the older groups reported using restraints. There was a gradual increase in the use of child restraints as the education level increased. In the less than high school group, 26% reported using child restraints and this increased to a high of 58% among college graduates. In income groups, the highest percent of those using restraints was in the \$35,000 and over (57%) group and the lowest percent was in the under \$10,000 income group (26%).

TABLE 50 - FREQUENCY OF CHILD RESTRAINT USE

| Q. If/When you ride with children in a motor vehicle, how often do they wear child restraints (child safety seats if under 3 years of age)? | | | | | |
|---|-------------------------|----------------|---------------|----------------|-----------------|
| | (Number of respondents) | Always-Usually | At Least Half | Less Than Half | Never or Rarely |
| Total Public | (493) | 37 | 6 | 9 | 48 |
| Sex | | | | | |
| Male | (183) | 28 | 6 | 11 | 56 |
| Female | (310) | 42 | 6 | 8 | 43 |
| Age | | | | | |
| 18-34 | (185) | 44 | 6 | 6 | 44 |
| 35-54 | (155) | 32 | 4 | 13 | 51 |
| 55+ | (150) | 36 | 8 | 8 | 49 |
| Education | | | | | |
| less than high school | (76) | 26 | 2 | 2 | 70 |
| high school | (196) | 30 | 5 | 14 | 52 |
| some college | (115) | 64 | 11 | 7 | 46 |
| college grad | (103) | 58 | 6 | 8 | 29 |
| Income | | | | | |
| under \$10,000 | (102) | 26 | 5 | 7 | 62 |
| \$10,000-\$19,999 | (156) | 41 | 8 | 11 | 40 |
| \$20,000-\$34,999 | (100) | 32 | 5 | 11 | 51 |
| \$35,000 and over | (50) | 57 | 0 | 11 | 32 |

Accidents are the fourth leading cause of death among adults and the first leading cause of those from one to thirty-five years of age. If Montanans are to reduce the incidence of accidental deaths on the highways, adults and children should buckle up. Table 51 illustrates the frequency of safety belt use in Montana. Only 16% of adults "usually" buckle up and 8% reported using seatbelts at least half the time. More females (18%) than males (12%) indicated a tendency to use safety belts regularly. Those 35 and older were more inclined to use seat belts than the younger age group. As Montanans became better educated they were more likely to use their seat belts. This same trend was noted as income increased.

TABLE 51 - FREQUENCY OF SAFETY BELT USE

| Q. How often do you wear your safety belt when you drive or ride in a motor vehicle? | | | | | | |
|--|-------------------------|----------------|---------------|----------------|-----------------|---------------|
| | (Number of respondents) | Always-Usually | At Least Half | Less Than Half | Never or Rarely | Doesn't Apply |
| Total Public | (497) | 16 | 8 | 16 | 59 | 2 |
| Sex | | | | | | |
| Male | (182) | 12 | 8 | 16 | 64 | 1 |
| Female | (315) | 18 | 8 | 16 | 56 | 2 |
| Age | | | | | | |
| 18-34 | (184) | 13 | 7 | 14 | 66 | 1 |
| 35-54 | (158) | 18 | 8 | 17 | 56 | 1 |
| 55+ | (152) | 17 | 9 | 18 | 53 | 3 |
| Education | | | | | | |
| less than high school | (77) | 8 | 5 | 13 | 71 | 3 |
| high school | (195) | 13 | 7 | 13 | 67 | 1 |
| some college | (116) | 15 | 8 | 17 | 58 | 3 |
| college grad | (106) | 29 | 11 | 22 | 36 | 2 |
| Income | | | | | | |
| under \$10,000 | (101) | 11 | 9 | 21 | 59 | 0 |
| \$10,000-\$19,999 | (157) | 15 | 9 | 15 | 59 | 2 |
| \$20,000-\$34,999 | (101) | 17 | 7 | 16 | 60 | 0 |
| \$35,000 and over | (50) | 28 | 8 | 18 | 46 | 0 |

Table 52 indicates the prevalence of hazardous job activity in the state. 22% of adults claim they have worked at a job which was hazardous to their health. More males (31%) than females (11%) indicated this. More individuals (18-34) indicated working at a hazardous job than older Montanans. Also, those with a high school education or less were more likely to have held a dangerous job than those with at least some college education. It is interesting to note, however, that the adults with the highest income level (\$35,000 and over) had the greatest likelihood of having held a hazardous job (30%).

TABLE 52 - HAZARDOUS JOB

| Q. Have you ever worked at a job that you considered to be dangerous to your health? | | | | | | | | | | | | | | |
|--|--------------|-------|-------|-------|-------|-------|-----------------------|-------------|--------------|--------------|----------------|-------------------|-------------------|-------------------|
| (Number of respondents) | Sex | | | Age | | | | Education | | | Income | | | |
| | Total Public | M | F | 18-34 | 35-54 | 55+ | less than high school | high school | some college | college grad | under \$10,000 | \$10,000-\$19,999 | \$20,000-\$34,999 | \$35,000 and over |
| | (498) | (183) | (315) | (183) | (158) | (154) | (77) | (196) | (116) | (106) | (102) | (157) | (101) | (50) |
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| NO | 79 | 61 | 89 | 75 | 77 | 85 | 79 | 74 | 85 | 81 | 75 | 76 | 79 | 70 |
| YES | 22 | 39 | 11 | 25 | 23 | 15 | 21 | 27 | 16 | 19 | 26 | 24 | 21 | 30 |

Table 53 illustrates major health conditions among adult Montana survey respondents. The greatest prevalence of a major health condition among those surveyed was bronchitis (16%) and a major motor vehicle accident (15%). 4% of adults have had a heart attack and/or cancer. Males indicated more heart attacks, strokes, motor vehicle accidents, and emphysema; females indicated more asthma, bronchitis, and cancer. When age was examined, those 18-34 indicated more asthma and those 55+ indicated more major health complications than any other age group except for asthma. Significantly more individuals with less education had experienced a heart attack (16%) and cancer (8%) than those with higher levels of education. College graduates had the highest rates for major motor vehicle accidents (18%); income correlated quite similarly.

TABLE 53 - MAJOR HEALTH CONDITIONS

| Q. Have you ever had the following major health conditions? | | | | | | | | | | |
|---|-------------------------|--------------|--------|------------------------------|-----------|--------|------------|-----------|--------|--|
| | (Number of respondents) | Heart Attack | Stroke | Major Motor Vehicle Accident | Emphysema | Asthma | Bronchitis | Cirrhosis | Cancer | |
| Total Public | (499) | 4 | 1 | 15 | 2 | 7 | 16 | 0 | 4 | |
| Sex | | | | | | | | | | |
| Male | (183) | 6 | 2 | 20 | 4 | 6 | 10 | 0 | 3 | |
| Female | (316) | 4 | 1 | 13 | 2 | 8 | 20 | 0 | 5 | |
| Age | | | | | | | | | | |
| 18-34 | (185) | 0 | 1 | 16 | 0 | 9 | 15 | 0 | 0 | |
| 35-54 | (158) | 1 | 1 | 14 | 1 | 6 | 15 | 0 | 4 | |
| 55+ | (153) | 13 | 3 | 16 | 7 | 7 | 19 | 0 | 9 | |
| Education | | | | | | | | | | |
| less than high school | (76) | 16 | 3 | 9 | 7 | 7 | 16 | 0 | 8 | |
| high school | (197) | 4 | 1 | 17 | 3 | 8 | 14 | 0 | 3 | |
| some college | (117) | 3 | 1 | 14 | 1 | 10 | 19 | 0 | 3 | |
| college grad | (106) | 0 | 1 | 18 | 0 | 9 | 18 | 0 | 5 | |
| Income | | | | | | | | | | |
| under \$10,000 | (102) | 11 | 0 | 13 | 5 | 11 | 20 | 0 | 7 | |
| \$10,000-\$19,999 | (157) | 3 | 2 | 20 | 1 | 6 | 14 | 0 | 4 | |
| \$20,000-\$34,999 | (101) | 1 | 2 | 9 | 2 | 7 | 13 | 0 | 0 | |
| \$35,000 and over | (20) | 2 | 0 | 24 | 2 | 2 | 14 | 0 | 2 | |

Table 54 indicates reasons Montanans have for avoiding better health. Most claim inconvenience (40%); enjoyment of the habit (37%); or lack of time (35%). Females stated inconvenience (41%) as their chief complaint. Males, however, claimed enjoyment of the habit (45%) as their chief reason. When age was examined, those 18-34 stated inconvenience (48%) as did those adults 35-54 (46%); those 55+ adults, however, claimed lack of time (27%) as their chief complaint. Those with less than a high school education claimed habit enjoyment (38%) as the primary reason. Those with a high school education claimed an inconvenience (42%). Those individuals with some college and a degree also claimed inconvenience (44%) and (46%) respectively. When income was examined, cost was mentioned most readily by those with less than \$10,000 in family income. Inconvenience was most readily mentioned by the other income groups.

TABLE 54 - REASONS FOR AVOIDING BETTER HEALTH

| Q. Which reasons do you claim for avoiding better health? | (Number of respondents) | Lack of Time | Lack of Information | Attitudes of Co-Workers | Attitudes of Family/Friends | Cost | Lack of Facilities | Discomfort or Pain | Enjoy the Habit | Inconvenience |
|---|-------------------------|--------------|---------------------|-------------------------|-----------------------------|------|--------------------|--------------------|-----------------|---------------|
| Total Public | (498) | 35 | 9 | 6 | 16 | 30 | 20 | 17 | 37 | 40 |
| Sex | | | | | | | | | | |
| Male | (183) | 31 | 9 | 8 | 14 | 25 | 18 | 17 | 45 | 40 |
| Female | (315) | 38 | 9 | 5 | 17 | 32 | 21 | 17 | 32 | 41 |
| Age | | | | | | | | | | |
| 18-34 | (185) | 45 | 10 | 10 | 22 | 40 | 29 | 17 | 40 | 48 |
| 35-54 | (157) | 31 | 8 | 5 | 15 | 29 | 20 | 15 | 43 | 46 |
| 55+ | (153) | 27 | 10 | 3 | 9 | 19 | 10 | 17 | 26 | 24 |
| Education | | | | | | | | | | |
| less than high school | (76) | 18 | 8 | 7 | 15 | 28 | 13 | 17 | 38 | 22 |
| high school | (198) | 39 | 11 | 8 | 15 | 32 | 18 | 13 | 41 | 42 |
| some college | (117) | 38 | 9 | 4 | 14 | 30 | 27 | 16 | 31 | 44 |
| college grad | (106) | 37 | 10 | 6 | 20 | 27 | 23 | 22 | 33 | 46 |
| Income | | | | | | | | | | |
| under \$10,000 | (101) | 31 | 15 | 9 | 18 | 46 | 24 | 21 | 36 | 33 |
| \$10,000-\$19,999 | (157) | 38 | 7 | 5 | 15 | 29 | 21 | 15 | 41 | 45 |
| \$20,000-\$34,999 | (101) | 41 | 9 | 5 | 12 | 25 | 19 | 14 | 40 | 48 |
| \$35,000 and over | (50) | 36 | 8 | 10 | 22 | 24 | 26 | 22 | 42 | 50 |

Table 55 characterizes the survey respondents in terms of weight. 21% of adults in Montana were overweight by 20% or more. More males fell into this category. 23% of adults were 10-20% overweight and more males also fell into this region as well. Overall, 44% of adults were overweight; 54% were ideal weight; and 2% were underweight. Generally, more females fell into each of these last two categories.

TABLE 55 - WEIGHT OF MONTANA'S SURVEY POPULATION

| | Males % | Females % | Total % |
|----------------------------|------------|--------------|------------|
| over 20% overweight | 24 | 19 | 21 |
| 10-20% overweight | 30 | 19 | 23 |
| ideal weight | 44 | 59 | 54 |
| 15% or more underweight | 2 | 2 | 2 |

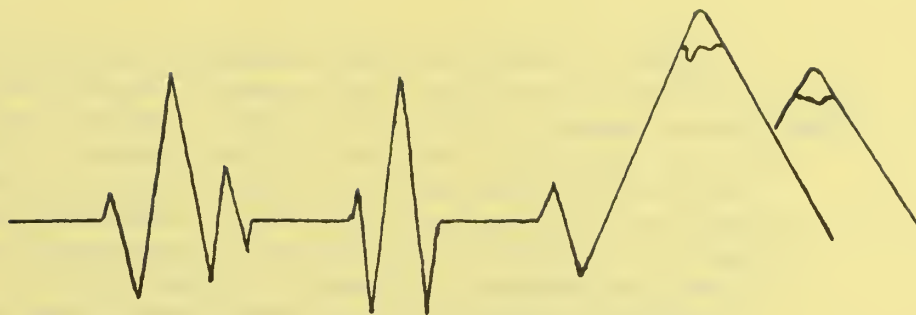
Observations:

TABLE 56 - RESPONSIBILITY FOR HEALTH

| Q. How do you feel has primary responsibility for your health? | | | | | | | | | | | | | | |
|--|-----------------|-------|-------|-----------|-----------|--------------|--------------------------------|----------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|----------------------|
| (Number of respondents) | Sex | | Age | | | | | Education | | | Income | | | |
| | Total Public | M | F | 18- 34 | 35- 54 | 55+ (150) | less than high school | high school | some college | college grad | under \$10,000 | \$10,000- \$19,999 | \$20,000- \$34,999 | \$35,000 and over |
| | (490) | (180) | (310) | (183) | (155) | (150) | (75) | (192) | (115) | (105) | (98) | (157) | (100) | (50) |
| Doctor | 9 | 9 | 10 | 4 | 5 | 20 | 21 | 7 | 9 | 7 | 15 | 11 | 4 | 10 |
| Youself | 87 | 86 | 88 | 94 | 94 | 73 | 67 | 92 | 89 | 92 | 80 | 89 | 94 | 88 |
| Someone Else | 3 | 6 | 2 | 2 | 1 | 7 | 12 | 2 | 3 | 1 | 5 | 1 | 2 | 2 |

There is increasing evidence of the need for more emphasis on preventive medicine in general health practices in order to protect, enhance, and improve the general health and safety of individuals in the state of Montana. There once was a time when preventive health practices meant immunizations. Needless to say, the concept has broadened to include major chronic health conditions of today such as heart disease and cancer as well as acute illnesses such as measles and mumps.

The economic costs of neglecting to pursue preventive strategies can run high in terms of medical expenditures later on. Individuals must recognize that health is largely a matter of individual choice and lifestyle. Table 56 shows that 87% of adults in Montana felt they were responsible for their own health. More and more individuals are demanding to know from today's health professionals how to take better care of themselves. It is the responsibility of the public, private and voluntary health sectors of society to meet this challenge head on and through education and a commitment to long term goals, help the Montanan of today and tomorrow to lead a happier, more productive and most of all healthier life.



Report Card: Health of Montana's People

Report Card: Health of Montana's People

Throughout this study references have been made to health promotion, acute and chronic diseases and risk factors. Generalizations and specifics about different ages, groups, sexes, income levels, and educational levels of Montana adults have been discussed. But what is the health status of the average adult Montanan? In the past, any synopsis would have been a guess, but the data from this study enables the Montana Department of Health & Environmental Sciences to draft a health profile status and based on information from the Framingham, Massachusetts heart study and Prospective Medicine,¹ Montanans can be graded on how healthy their lifestyle is.

The lifestyle categories which Montanans will be graded on include smoking, stress, exercise, overweight, nutrition, alcohol, life satisfaction, health responsibility, and low-risk driving. Grading will be "A" (excellent), "B" (very good), "C" (average), "D" (poor), and "F" (failing). While no grading system is infallible, this one is more vulnerable than most because of the variations in health-rating systems and the lack of agreement as to the influences of various risk factors to health promotion. Also, the grading system is composed for the average adult male and female Montanan. The report card of the different sexes is illustrated in Table L.

In the categories of "exercise", "overweight", and "smoking," the average adult female received a grade of "B". The "B" grade was derived from calculations based on the Geller-Gesner Tables.¹ For each of these categories her risk to heart disease was lower than the average 45 year old female. Her sex counterpart was graded the same for "exercise" and "overweight"; however, he was found to be at average risk for smoking for a 43 year old male and received a "C" grade.

The grades of the remaining categories are based upon means from the nominal and ordinal scales of health risk behaviors.² The highest grade for both sexes was an "A" for "Life satisfaction" because less than 3% of the adults were "mostly disappointed" with their life. The only other "A" was given to the average female for the category "alcohol" because her drinking pattern of 1 to 2 drinks per occasion has been reported to be health promoting.

1

Jack H. Hall, Jack D. Zwemer, Dept. of Medical Education, Methodist Hospital of Indiana, 1979, 2nd (ed.)

2

Stevens, S.S., Theory of Scales & Means, SCIENCE, 103, 677-680, 1946.

The average male received a "B" for this category because the 3 drinks per occasion increases his risks to accidents and some chronic diseases.

Other categories graded "B" were "health responsibility" and "nutrition". The average male and female indicated strongly that "yourself" is responsible for his/her health. As for the evaluation of "nutrition", a "B" was given for the average male and female because the frequency of breakfast and the infrequency of salty and sweet snacks were positive nutrition patterns.

The categories with the lowest grades for both sexes are "stress" and "low-risk driving." The average male and female were graded "C" for stress. While this grade is for a composite category, some of the indices such as being nervous and aggressive, are somewhat common among the average female and male. Also, included in the "stress" category is stress coping skills and some of the short-term (life-threatening) coping mechanisms are prominent as a way to cope with stress for the average male and female

The lowest grade given was a "D" for "low-risk driving" for males. The average male rarely uses his seat belt and has driven at least once with a "good bit to drink" within the past year. The average adult female received a "C" here because she drives nearly half the time using a seat belt and is less apt to drive with a "good bit to drink."

The composite grade for the average female and male is above average. Of course, there is room to improve and hopefully each Montanan will take control of his/her health in a preventive fashion in order to lead a healthier life in Montana.

TABLE L: REPORT CARD: HEALTH OF MONTANA'S PEOPLE

| | average female | average male |
|-----------------------|----------------|--------------|
| age | 45 | 43 |
| life satisfaction | A | A |
| smoking | B | C |
| alcohol | A | B |
| exercise | B | B |
| health responsibility | B | B |
| overweight | B | B |
| nutrition | B | B |
| stress | C | C |
| low-risk driving | C | D |



Appendix

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METHODOLOGY

THE SURVEY -- DATA COLLECTION

The Questionnaire

The basic format for the questionnaire used in this survey was similar to one used for a HE/RR project in Colorado. Additional, deletions and rearrangements followed an initial pre-testing of the questionnaire. The actual version used is reproduced in Appendix A. In most cases, administration of the questionnaire required 10 to 25 minutes.

Sample Selection

The target population was defined to consist of all Montanans of age 18 years or older at the time the survey was conducted. It was determined that 500 completed interviews should be obtained. This number was expected to give acceptable sampling error limits for the wide range of questions to be asked.

The 500 interviews were first allocated to the 56 Montana counties according to numbers of households reported in the 1980 Census.¹ Figure 1 shows the resulting allocation. Counties were then grouped according to Montana Health Regions (Figure 2).

In order to save money, counties within Health Regions were pooled into strata on the basis of size and geographic proximity. The sum of allocated interviews for counties composing a stratum was assigned to the stratum itself. (See Table 1.)

In each multi-county stratum, one county was chosen to represent that stratum, and all interviews for the stratum were completed in that county. Such counties were chosen at random and with probability proportional to county size as measured by numbers of households. In this way, every Montana household having a telephone had an equal chance of being sampled. Figure 3 shows the final results of county selection. Note that minor adjustments were made in order to obtain exactly 500 interviews.

Telephone numbers were chosen in sample counties using the most recent phone books available. Systematic samples were chosen using random starting points. Extra numbers were

¹1980 Census of Population and Housing, Advance Report #PHC80-V-28, Issued February 1981, U.S. Bureau of the Census, Washington, D.C.

chosen (in anticipation of nonresponse problems) in such a way as to spread the samples over the entire alphabetical range of surnames.

Individual sample respondents were identified using a special "screener." This screener and the associated interviewer instructions are found in Appendix B. The within-household subsampling scheme used was designed to achieve an even distribution of respondents across age/sex categories.

Interviewing Schedule and Procedures

All 500 telephone interviews were completed between October 28 and November 28, 1981. The majority of the interviewing was done by Motnana Surveys, Interviews and Research (MSIR), of Great Falls, Montana. This organization maintains a staff of interviewers throughout Montana so that long distance telephone charges can be minimized. MSIR conducted 435 of the interviews. The remainder were completed by Smouse Research Associates.

Telephone numbers generated for a given area were called in the given (random) sequence. If no answer was obtained after three attempts (at different times of day) or if refusals were encountered, the next assigned number was used. This process continued until the area's quota was reached.

While no organized analysis of nonresponse has been conducted, conversations with interviewers indicate that it was generally more difficult to complete interviews with males than with females. This probably accounts for the unequal male/female representation in the final sample (63.4% female).

Editing and Data Entry

Completed questionnaires were returned by the interviewers to MSIR where validation was done for approximately 8% of the interviews.

Questionnaires were then mailed to Smouse Research Associates for further analysis. Data from each questionnaire were edited and then entered directly to computer files using a CRT-type terminal connected via telephone to the Honeywell Level-66 Computer at Montana State University. Routine checks were completed to assure consistency of responses within a given questionnaire and to confirm that proper questionnaire editing was accomplished.

THE SURVEY -- DATA ANALYSIS

Estimation Procedures

All data analysis was performed using statistical routines contained in the SPSS computer system.² Frequency distributions were obtained using the actual survey data for discretized variables. Other summary statistics were calculated for continuous-type variables.

Since the sample male/female ratio (0.577) differed substantially from that in the population (0.996), separate analyses were obtained for males and for females.

Finally, revised overall frequencies and summary statistics were calculated after correcting the sample male/female ratio. This was done within the SPSS system by giving male respondents and female respondents weights of 1.3634 and 0.7902, respectively.

Estimated Prevalences

The computer-generated analyses referred to above were delivered to the Preventive Health Services Bureau, Helena, Montana, under separate cover. For variables having different results for males than for females, the sex-adjusted analyses should be used. Otherwise, the actual survey frequencies are more appropriate. The need for sex-adjustment for a given variable is indicated on the computer printouts made available earlier.

Questions relating to statistical reliability, confidence intervals, comparing proportions and related matters should be referred to Smouse Research Associates for proper interpretation. A rough rule of thumb for this survey is that percentages quoted are reliable within limits of ± 4 percentage points.

Open-ended Questions

Several of the questions in this survey allowed specification of responses other than those printed on the questionnaire. When given, these were conveniently coded as "Other" for computer analysis. The actual responses may be of interest. They are tabulated in Table 2.

²Statistical Package for the Social Sciences, Version 8.1, SPSS, Inc.

PRINCIPLES FOR ATTAINMENT OF
PROJECT GOALS

Attainment of the Project goals was governed by a set of four guiding principles:

1. VALIDITY - Great scrutiny was exercised to insure both the content of the instrument and the methodology for the administration of the survey were valid. Every item on the survey instrument was selected on a rationale based on the available scientific and statistical evidence or policy significance. The survey methodology was planned and executed with scientific rigor and professionalism.
2. APPROPRIATENESS TO MONTANA - Extensive review by health experts in Montana was conducted to insure survey items were appropriate and the coverage of items was comprehensive.
3. UNDERSTANDABILITY OF INSTRUMENTS - The instrument was developed with lay comprehension and clarity among the foremost guiding principles. The readability level of approximately seventh to ninth grades was the standard.
4. STATE-WIDE REPRESENTATIVENESS OF DATA - Sample selection and size were intended to allow for accurately forecasting health risk trends. In this case, the sampling design was intended to achieve a truly randomized and hence representative sample of Montanans aged 18 and older.

Figure 1.

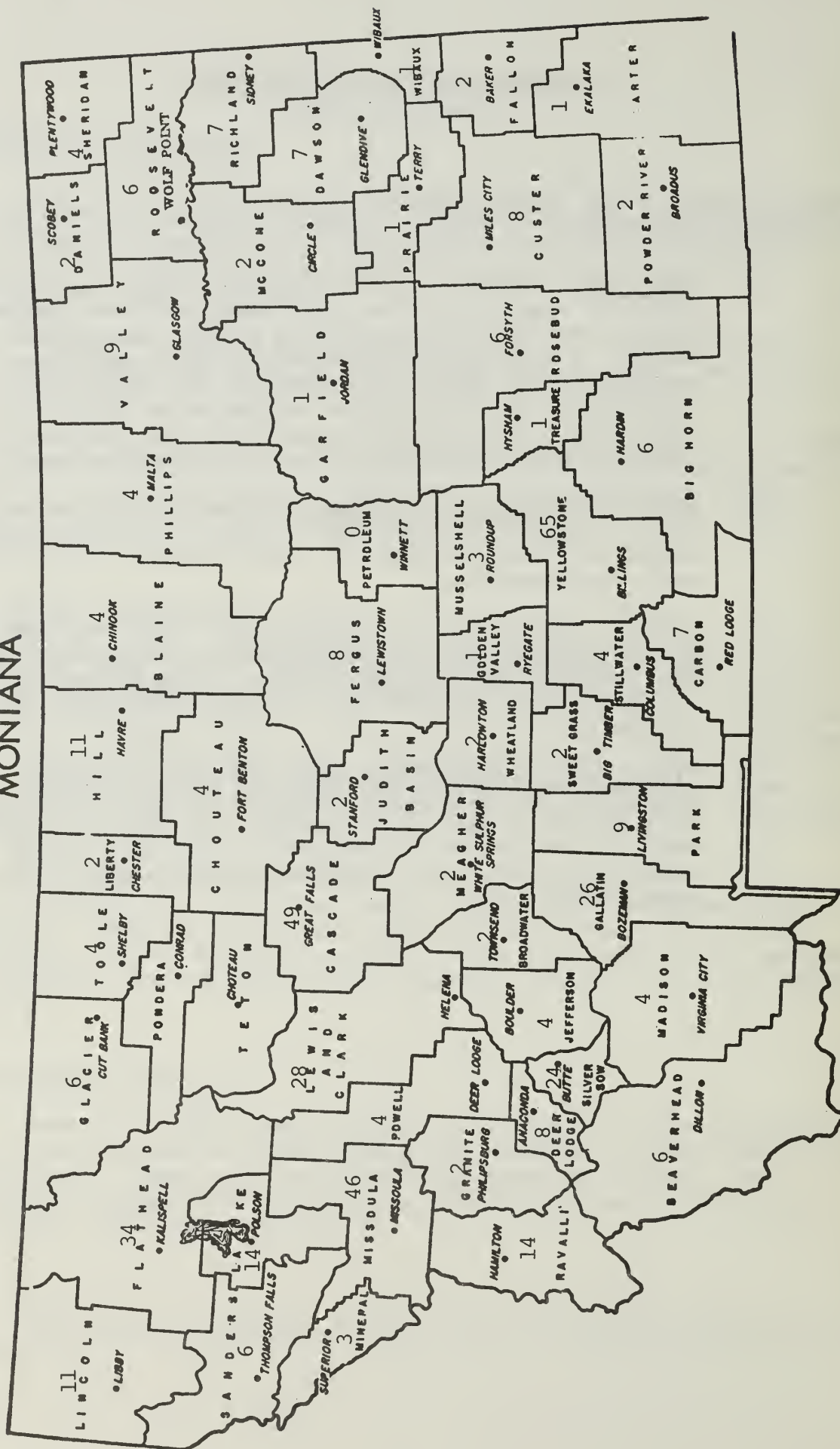
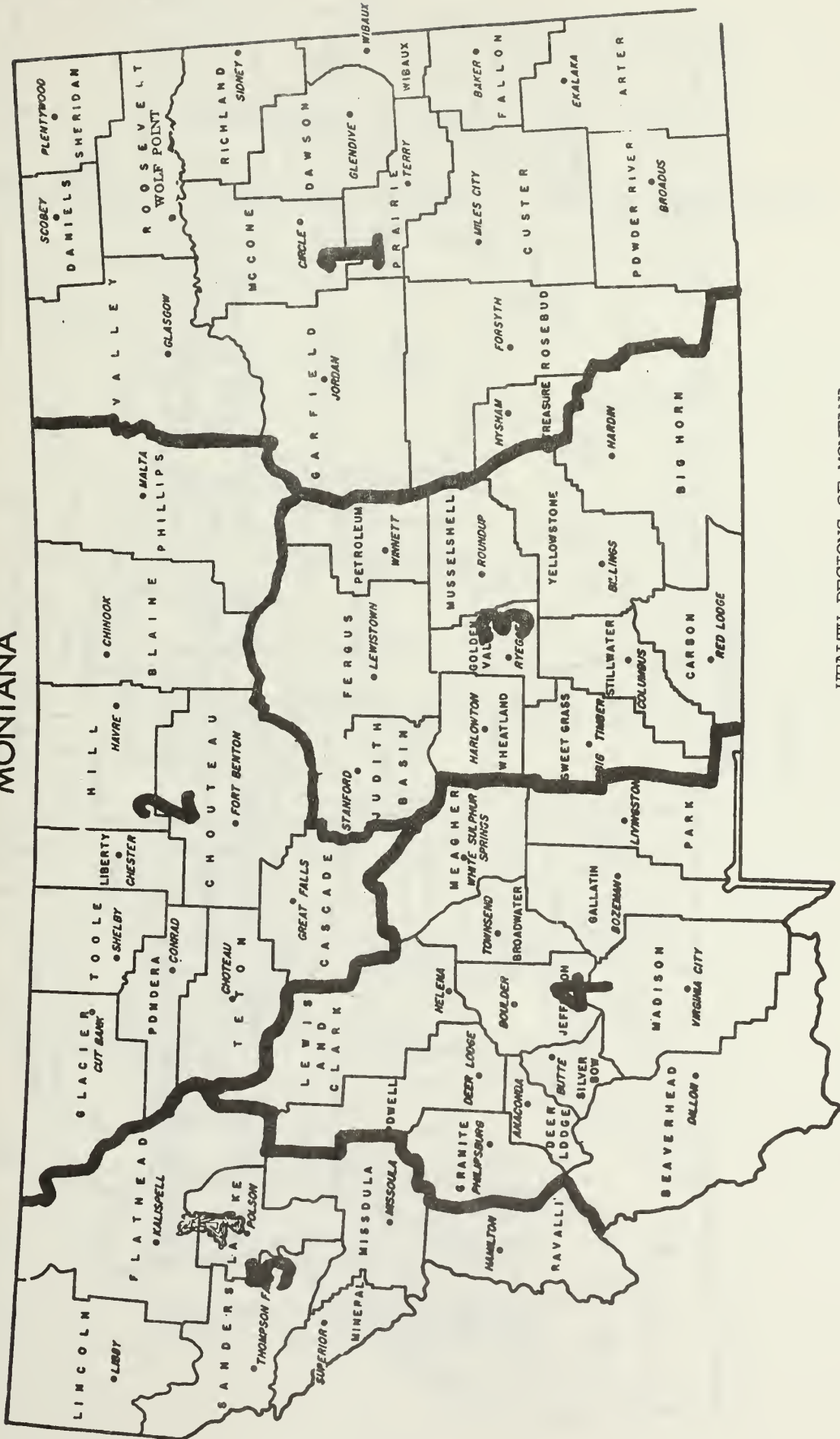


Figure 2.

MONTANA



HEALTH REGIONS OF MONTANA

TABLE 1

Composition of Strata

| <u>Stratum Number</u> | <u>Counties in Stratum</u> | <u>Stratum Sample Size</u> |
|-----------------------|--|----------------------------|
| 1 | Lincoln, Sanders, Mineral | 20 |
| 2 | Flathead | 34 |
| 3 | Lake | 14 |
| 4 | Missoula | 46 |
| 5 | Ravalli | 14 |
| 6 | Glacier, Toole, Liberty, Pondera, Teton | 20 |
| 7 | Hill, Blaine, Chouteau | 19 |
| 8 | Cascade | 49 |
| 9 | Lewis and Clark | 28 |
| 10 | Powell, Granite, Deer Lodge, Beaverhead | 20 |
| 11 | Silver Bow | 24 |
| 12 | Madison, Jefferson, Broadwater, Meagher, Park | 21 |
| 13 | Gallatin | 26 |
| 14 | Judith Basin, Fergus, Petroleum, Wheatland, Golden Valley, Musselshell | 16 |
| 15 | Sweet Grass, Stillwater, Carbon Big Horn | 19 |
| 16 | Yellowstone | 65 |
| 17 | Phillips, Valley, Daniels, Sheridan, Roosevelt | 25 |
| 18 | Garfield, McCone, Richland, Dawson, Prairie, Wibaux | 19 |
| 19 | Treasure, Rosebud, Custer, Powder River, Carter, Fallon | 20 |

APPENDIX A

The Questionnaire

Start _____ Telephone # $\frac{\quad}{1} \frac{\quad}{2} \frac{\quad}{3} \frac{\quad}{4} \frac{\quad}{5} \frac{\quad}{6} \frac{\quad}{7}$ Number of persons 18 years or older in this household $\frac{\quad}{8}$

NOTE TO INTERVIEWER: SAY "First, I'd like to ask you some questions about smoking."

1. Have you smoked at least 100 cigarettes (5 packes) in your life?

1 = No (SKIP TO QUESTION NUMBER 10.)

2 = Yes (GO ON TO QUESTION NUMBER 2.)

9 = DON'T KNOW/NOT SURE (SKIP TO QUESTION NUMBER 10.)

$\frac{\quad}{9}$

2. About how old were you when you first started smoking cigarettes fairly regularly?

_____ years old

$\frac{\quad}{10} \frac{\quad}{11}$

IF NEVER SMOKED REGULARLY, CODE '00' AND SKIP TO QUESTION NUMBER 10.

IF AN AGE IS GIVEN, GO ON TO THE NEXT QUESTION.

3. Do you smoke cigarettes now?

1 = No (SKIP TO QUESTION NUMBER 5.)

2 = Yes (GO ON TO QUESTION NUMBER 4.)

$\frac{\quad}{12}$

4. On the average, about how many cigarettes a day do you now smoke?

NOTE TO INTERVIEWER: ONE PACK IS EQUAL TO 20 CIGARETTES.

_____ number

$\frac{\quad}{13} \frac{\quad}{14} \frac{\quad}{15}$

(SKIP TO QUESTION 6.)

5. About how long has it been since you last smoked cigarettes fairly regularly? Has it been: (READ LIST.)

1 = less than one month (SKIP TO QUESTION 7.)

2 = more than one month but less than one year (SKIP TO QUESTION 7.)

3 = more than one year (SKIP TO QUESTION 9.)

$\frac{\quad}{16}$

6. Have you ever made a serious attempt to stop smoking cigarettes entirely?

1 = No (SKIP TO QUESTION 9.)

2 = Yes (GO ON TO QUESTION 7.)

$\frac{\quad}{17}$

7. About how many times would you say you have made a fairly serious attempt to stop smoking cigarettes entirely?

1 = One

2 = Two

3 = Three

4 = Four

5 = Five or more

9 = DON'T KNOW/NOT SURE

$\frac{\quad}{18}$

8. How long did you abstain from cigarettes the last time?

_____ number (CODE THE NUMBER.)

1 = days

2 = weeks

3 = months (CIRCLE THE TIME UNIT.)

4 = years

/ /
19 20

/ /
21

9. Do/Did you usually smoke filter or plain cigarettes?

1 = Filter

2 = Plain

/ /
22

SAY: "Now I'd like to ask you some questions about exercise."

10. How much strenuous physical activity is required on your job or daily household tasks? Would you say: (READ LIST.)

1 = A great deal

2 = Some

3 = Hardly any

4 = None at all

9 = DON'T KNOW/NOT SURE

/ /
23

11. How often do you exercise or participate in an active, physical sport such as running, jogging, calisthenics, swimming, bicycling, and the like? Would you say: (READ LIST.)

1 = Every day

2 = 3-6 times/week

3 = 1-2 times/week

4 = 1-3 times/month

5 = Less than once/month

9 = DON'T KNOW/NOT SURE

/ /
24

12. When you do exercise or participate in an active, physical sport, how long are you usually involved? Would you say: (READ LIST.)

1 = 1 hour or more

2 = Between 1/2 hour and 1 hour

3 = Between 15 and 30 minutes

4 = Less than 15 minutes

9 = DON'T KNOW/NOT SURE

/ /
25

13. How often is your exercise vigorous and long enough to cause you to perspire? Would you say: (READ LIST.)

1 = Usually or often

2 = Sometimes

3 = Rarely

4 = Never

9 = DON'T KNOW/NOT SURE

/ /
26

14. How often do you participate in physical recreation or hobbies such as dancing, gardening, golfing, softball, and the like? Would you say: (READ LIST.)

1 = Every day

2 = 3-6 times/week

3 = 1-2 times/week

4 = 1-3 times/month

5 = Less than once/month

9 = DON'T KNOW/NOT SURE

/ /
27

15. Do you currently participate in a regular fitness program?

1 = No

2 = Yes

/ /
28

SAY: "Now I'd like to ask you some questions about your blood pressure."

16. Did/Do either of your natural parents have high blood pressure?

- 1 = No
2 = Yes

 / /
29

17. When did you last have your blood pressure checked? Was it: (READ LIST.)

- 1 = Within the last 6 months
2 = 7-12 months ago
3 = 1-2 years ago
4 = More than 2 years ago
5 = Never had blood pressure checked
9 = DON'T KNOW/NOT SURE

(GO ON TO QUESTION NUMBER 18.)

(SKIP TO QUESTION NUMBER 19.)

 / /
30

18. Where did you receive your blood pressure check? Was it: (READ LIST.)

- 1 = At a physician's office, hospital or private clinic
2 = Senior citizen center
3 = Local health department
4 = Done by yourself
5 = Other (specify) _____

 / /
31

19. Have you ever been told by a doctor, a nurse, or someone else that you have high blood pressure (also called hypertension or high blood)? READ RESPONSES.

- 1 = No (SKIP TO QUESTION NUMBER 27.)
2 = Yes, by a doctor
3 = Yes, by a nurse
4 = Yes, by someone else
9 = DON'T KNOW/NOT SURE

(GO ON TO QUESTION 20.)

(SKIP TO QUESTION 27.)

 / /
32

20. How long ago were you first told you had high blood pressure? READ RESPONSES.

- 1 = Within the last 6 months
2 = 7-12 months ago
3 = 1-2 years ago
4 = More than 2 years ago
9 = DON'T KNOW/NOT SURE

 / /
33

21. Has any treatment ever been prescribed for your high blood pressure?

- 1 = No (SKIP TO QUESTION 26.)
2 = Yes (GO ON TO QUESTION 22.)
9 = DON'T KNOW/NOT SURE (SKIP TO QUESTION 26.)

 / /
34

26. As far as you know, is your blood pressure still high?

- 1 = No, it is normal
2 = Yes, still elevated
9 = DON'T KNOW/NOT SURE

 /
45

SAY: "Now I am going to ask you some questions about stress."

27. How often are you worried or nervous in general? Would you say: (READ LIST.)

- 1 = All of the time 4 = Seldom
2 = Often 5 = Never
3 = Sometimes 9 = DON'T KNOW/NOT SURE

 /
46

28. Are you more aggressive than most people in getting what you want?

- 1 = No
2 = Yes
9 = DON'T KNOW/NOT SURE

 /
47

29. How often do you get upset, uptight, or irritable with those around you?
Would you say:

- 1 = All of the time 4 = Seldom
2 = Often 5 = Never
3 = Sometimes 9 = DON'T KNOW/NOT SURE

 /
48

30. People respond to stress in different ways. I'll read you a list and you tell me whether or not you ever do these things in stressful situations or when you feel pressured. Do you:

NOTE TO INTERVIEWER: MARK RESPONSES FOR ALL CATEGORIES.

| | <u>Never</u> | <u>Sometimes</u> | |
|---|--------------|------------------|---------------------|
| Let off steam by getting angry | 1 | 2 | <u> </u> / 49 |
| Exercise | 1 | 2 | <u> </u> / 50 |
| Drink alcoholic beverages | 1 | 2 | <u> </u> / 51 |
| Take medication, pills, etc. | 1 | 2 | <u> </u> / 52 |
| Meditate, pray, relax, day dream, etc. | 1 | 2 | <u> </u> / 53 |
| Do nothing, just endure the problem | 1 | 2 | <u> </u> / 54 |
| Talk over the problem with family or friend | 1 | 2 | <u> </u> / 55 |
| Sleep more than usual | 1 | 2 | <u> </u> / 56 |

| | <u>Never</u> | <u>Sometimes</u> | |
|-------------------------------------|--------------|------------------|---------------------|
| Confront the problem directly | 1 | 2 | <u> </u> / 57 |
| Wish the situation would get better | 1 | 2 | <u> </u> / 58 |
| Other _____ Specify | 1 | 2 | <u> </u> / 59 |

31. In general, how satisfied are you with your life? Are you: (READ LIST.)

| | | |
|----------------------|-------------------------|---------------------|
| 1 = Mostly satisfied | 3 = Mostly disappointed | <u> </u> / 60 |
| 2 = Partly satisfied | 9 = DON'T KNOW/NOT SURE | |

32. How strong do your social ties with family and friends tend to be?
READ ALL RESPONSES.

| | | |
|-------------------|-------------------------|---------------------|
| 1 = Very strong | 3 = Weaker than average | <u> </u> / 61 |
| 2 = About average | 9 = DON'T KNOW/NOT SURE | |

33. Have you suffered any serious personal loss or misfortune during the past twelve months? (Examples: death of someone close, job loss, serious health problem, divorce or separation, jail term.)

| | |
|-------------------------|---------------------|
| 1 = No | <u> </u> / 62 |
| 2 = Yes | |
| 9 = DON'T KNOW/NOT SURE | |

34. During the past year, how often did you witness or become involved in a violent or potentially violent argument? READ RESPONSES.

| | | |
|------------------|-------------------------|---------------------|
| 1 = Never | 4 = 4 or more times | <u> </u> / 63 |
| 2 = Once | 9 = DON'T KNOW/NOT SURE | |
| 3 = 2 or 3 times | | |

SAY: "Now I'd like to ask you a few questions about the food you eat."

35. How often do you eat breakfast? Would you say: (READ LIST.)

| | | |
|----------------------|-------------------------|---------------------|
| 1 = Almost every day | 3 = Rarely or never | <u> </u> / 64 |
| 2 = Sometimes | 9 = DON'T KNOW/NOT SURE | |

36. How often, if ever, do you currently take vitamin or mineral pills or supplements? (For example: iron, calcium, zinc, etc.) READ RESPONSES.

| | | |
|------------------|-------------------------|---------------------|
| 1 = Regularly | 3 = Rarely or never | <u> </u> / 65 |
| 2 = Occasionally | 9 = DON'T KNOW/NOT SURE | |

37. How often do you eat desserts or sweets such as candy, cake, pastries, donuts, sweet rolls, etc.? READ RESPONSES.

| | | |
|---------------------------|---------------------------|---------------------|
| 1 = Daily | 4 = Never or almost never | <u> </u> / 66 |
| 2 = 2 or more times daily | 9 = DON'T KNOW/NOT SURE | |
| 3 = At least once a week | | |

38. On the average, how often do you eat salty snacks like potato or corn chips, salted nuts, seeds or pretzels? (READ LIST.)

| | | |
|---------------------------|---------------------------|-----|
| 1 = Daily | 4 = Never or almost never | / / |
| 2 = 2 or more times daily | 9 = DON'T KNOW/NOT SURE | 67 |
| 3 = At least once a week | | |

39. On the average, how many between-meal snacks do you have each day?

| | |
|-------------------------|-----|
| 0 1 2 3 4 5 6 7 8 | / / |
| 9 = DON'T KNOW/NOT SURE | 68 |

40. Are you on a special diet or weight reduction diet?

| | |
|---------|-----|
| 1 = No | / / |
| 2 = Yes | 69 |

IF YES, SPECIFY _____

41. Do you get information on nutrition from: (READ LIST.)

NOTE TO INTERVIEWER: MARK RESPONSES IN ALL CATEGORIES.

| | <u>No</u> | <u>Yes</u> | |
|---------------------------|-----------|------------|-----------|
| Popular books, magazines | 1 | 2 | / / 70 |
| Radio, T.V., newspapers | 1 | 2 | / / 71 |
| Medical doctor | 1 | 2 | / / 72 |
| Health professionals | 1 | 2 | / / 73 |
| Naturopaths, diet centers | 1 | 2 | / / 74 |
| Others _____ | 1 | 2 | / / 75 |
| Specify | | | |

SAY: "Now I'd like to ask you a few questions about the use of alcohol. Please remember that your answers will be held strictly confidential."

42. Do you ever drink alcoholic beverages--that is, beer, wine, or liquor?

| | |
|---------------------------------|-----|
| 1 = No (SKIP TO QUESTION 50.) | / / |
| 2 = Yes (GO ON TO QUESTION 43.) | 76 |

43. On the average, how often do you drink alcoholic beverages? Would you say: (READ LIST.)

| | | |
|-------------------|--------------------------|-----|
| 1 = Every day | 4 = 1-3 days/month | / / |
| 2 = 3-6 days/week | 5 = Less than once/month | 77 |
| 3 = 1-2 days/week | 9 = DON'T KNOW/NOT SURE | |

44. A drink is one can or bottle of beer, one glass of wine, or one cocktail or shot of liquor. On the days that you do drink, how many drinks do you have? _____ (number)

 / / /
78 79

NOTE TO INTERVIEWER: IF THE ANSWER IS "DON'T KNOW/NOT SURE," CODE 99.

45. Do you now drink more or less than you did two years ago?

1 = More
2 = Less

3 = No change
9 = DON'T KNOW/NOT SURE

 / / /
80 81

46. How many times during the past month did you have 5 or more drinks on an occasion? _____ (number)

 / / /
82 83

NOTE TO INTERVIEWER: IF THE ANSWER IS "DON'T KNOW/NOT SURE," CODE 99.

47. During the past year, how many times have you driven a car when you've had a good bit to drink? Would you say: (READ LIST.)

1 = None (SKIP TO QUESTION 49.)

2 = Once

3 = 2-3 times

4 = 4-5 times

5 = 6-9 times

6 = 10 or more times

8 = Don't drive

9 = DON'T KNOW/NOT SURE] (SKIP TO QUESTION 49.)

(GO TO QUESTION 48.)

 /
84

48. More specifically, during the past year, have you ever driven a motor vehicle after having at least six drinks in two hours? Would you say: (READ LIST.)

1 = Never

2 = Once

3 = 2-3 times

4 = 4-5 times

5 = 6-9 times

6 = 10 or more times

8 = Don't drive

9 = DON'T KNOW/NOT SURE

 /
85

49. In the last year, has a physician or other health professional ever told you that drinking is injuring your health?

1 = No

2 = Yes

9 = DON'T KNOW/NOT SURE

 /
86

SAY: "Now I am going to ask you some questions about diabetes."

50. Do you have a family member with diabetes?

1 = No (SKIP TO QUESTION 51.)

2 = Yes (PROBE FOR WHICH FAMILY MEMBER ON THE NEXT PAGE.)

9 = DON'T KNOW/NOT SURE (SKIP TO QUESTION 51.)

- | | <u>No</u> | <u>Yes</u> | |
|---------------------------------|-----------|------------|---------------------------------|
| Does your father have diabetes? | 1 | 2 | <u> </u> / <u> </u> / 87 |
| Does your mother have diabetes? | 1 | 2 | <u> </u> / <u> </u> / 88 |
| Brother(s) or sister(s)? | 1 | 2 | <u> </u> / <u> </u> / 89 |
| Child/children? | 1 | 2 | <u> </u> / <u> </u> / 90 |
| Other blood relative(s)? | 1 | 2 | <u> </u> / <u> </u> / 91 |
51. Have you ever been told that you have diabetes or that your blood sugar level is too high?
- 1 = No (SKIP TO QUESTION 58.) / /
92
- 2 = Yes (GO ON TO QUESTION 52.)
- 9 = DON'T KNOW/NOT SURE (SKIP TO QUESTION 58.)
52. By whom were you told you have diabetes? Was it a: (READ LIST.)
- 1 = Doctor / /
93
- 2 = Nurse
- 3 = Other _____
Specify
53. Are you diabetic now?
- 1 = No (SKIP TO QUESTION 57.) / /
94
- 2 = Yes (GO ON TO QUESTION 54.)
- 9 = DON'T KNOW/NOT SURE (GO ON TO QUESTION 54.)
54. Has any treatment ever been prescribed for your diabetes?
- 1 = No (SKIP TO QUESTION 56.) / /
95
- 2 = Yes (GO ON TO QUESTION 55.)
- 9 = DON'T KNOW/NOT SURE (SKIP TO QUESTION 56.)
55. I'll read you a list and you tell me whether or not any of these things were prescribed for treating your diabetes. READ RESPONSES.

NOTE TO INTERVIEWERS: MARK RESPONSES FOR ALL CATEGORIES.

- | | <u>No, were not
prescribed</u> | <u>Yes, were
prescribed</u> | |
|---------------------------|------------------------------------|---------------------------------|---------------------------------|
| Insulin shots | 1 | 2 | <u> </u> / <u> </u> / 96 |
| Pills (medicine by mouth) | 1 | 2 | <u> </u> / <u> </u> / 97 |
| Diet | 1 | 2 | <u> </u> / <u> </u> / 98 |
| Other _____ Specify | 1 | 2 | <u> </u> / <u> </u> / 99 |

56. If you test your urine, do you test it: (READ LIST.)

| | | |
|--------------------|---------------------------|-----|
| 1 = Daily | 4 = Less than 1 time/week | / / |
| 2 = 2-3 times/week | 5 = Never test it | 100 |
| 3 = 1 time/week | 9 = DON'T KNOW/NOT SURE | |

57. Do you get information about diabetes from: (READ LIST.)

NOTE TO INTERVIEWER: MARK RESPONSES FOR ALL CATEGORIES.

| | <u>No</u> | <u>Yes</u> | |
|----------------------------|-----------|------------|------------|
| A doctor's office | 1 | 2 | / / 101 |
| A hospital | 1 | 2 | / / 102 |
| A public health department | 1 | 2 | / / 103 |
| A pharmacist | 1 | 2 | / / 104 |
| A diabetes association | 1 | 2 | / / 105 |
| Other _____ | 1 | 2 | / / 106 |
| Specify | | | |

SAY: "We've come to the last set of questions in this survey. I'm going to ask you some questions about yourself that are related to your general health and lifestyle."

58. How would you judge your own health? Would you say it is: (READ LIST.)

| | | |
|---------------|-------------------------|-----|
| 1 = Excellent | 4 = Poor | / / |
| 2 = Good | 9 = DON'T KNOW/NOT SURE | 107 |
| 3 = Fair | | |

59. How long ago did you last see a dentist for a checkup (not to fill a cavity or take care of a specific problem)? READ RESPONSES.

| | | |
|------------------------------|---------------------------|-----|
| 1 = Never | 4 = 1 to 2 years ago | / / |
| 2 = Within the last 6 months | 5 = More than 2 years ago | 108 |
| 3 = 6 months to a year ago | 9 = DON'T KNOW/NOT SURE | |

60. If/When you ride with children in a motor vehicle, how often do they wear child restraints (child safety seats if under 3 years of age)? Would you say: (READ LIST.)

| | | |
|-----------------------------|------------------------------|-----|
| 1 = Always or almost always | 4 = Never or almost never | / / |
| 2 = More than half the time | 8 = Never ride with children | 109 |
| 3 = Less than half the time | 9 = DON'T KNOW/NOT SURE | |

61. How often do you wear your safety belt when you drive or ride in a motor vehicle? Would you say: (READ LIST.)

| | | |
|-----------------------------|-----------------------------------|-----|
| 1 = Always or almost always | 4 = Never or almost never | / / |
| 2 = More than half the time | 8 = Never ride in a motor vehicle | 110 |
| 3 = Less than half the time | 9 = DON'T KNOW/NOT SURE | |

62. What is your date of birth?

| | | |
|--|-----|-------------|
| Month _____ (WRITE THE NAME OF THE MONTH.) | / / | / / |
| | 111 | 112 |
| Day _____ | / | / |
| | 113 | 114 |
| Year _____ | / / | / / |
| | 115 | 116 117 118 |

63. Sex (USUALLY DO NOT NEED TO ASK).

| | |
|------------|-----|
| 1 = Male | / / |
| 2 = Female | 119 |

64. What is the last year of schooling that you have completed (not in the process of completing)? _____

| | |
|-----|-----|
| / / | / / |
| 120 | 121 |

NOTE TO INTERVIEWER: Kindergarten = 0
 Grades one through twelve = 1-12
 College = 13, 14, 15, 16
 Graduate = 17, 18

NOTE TO INTERVIEWER: CODE "19" FOR MORE THAN A GRADUATE EDUCATION.

65. How much to you weigh? (IF ASKED, " Without clothing or fully clothed," OBTAIN THE WITHOUT CLOTHING WEIGHT.)

| | | | |
|------------------------|-----|-----|-----|
| Weight in pounds _____ | / / | / / | / / |
| | 122 | 123 | 124 |

NOTE TO INTERVIEWER: ROUND 1/2 LB. OR MORE UP TO THE NEXT POUND. ROUND NUMBERS LESS THAN 1/2 LB. DOWN TO THE NEXT POUND.

66. How tall are you in your stocking feet?

| | | | |
|--------------|-----|-----|-----|
| Height _____ | / / | / / | / / |
| feet inches | 125 | 126 | 127 |

NOTE TO INTERVIEWER: ROUND 1/2 INCH OR MORE UP TO THE NEXT INCH, ROUND NUMBERS LESS THAN 1/2 INCH DOWN TO THE NEXT INCH.

67. Have you ever worked at a job that you considered to be dangerous to your health (e.g., mining, dusty trades, working asbestos, working with chemicals, welding, exposure to radiation)? (EXCLUDE ACCIDENTS.)

| | |
|-------------------------|-----|
| 1 = No | / / |
| 2 = Yes | 128 |
| 9 = DON'T KNOW/NOT SURE | |

68. Have you ever had: (READ LIST.)

| | <u>No</u> | <u>Yes</u> | <u>Don't know/ Not sure</u> | |
|------------------------------|-----------|------------|---------------------------------|----------------------|
| a heart attack | 1 | 2 | 9 | <u> </u> / 129 |
| a stroke | 1 | 2 | 9 | <u> </u> / 130 |
| major motor vehicle accident | 1 | 2 | 9 | <u> </u> / 131 |
| emphysema | 1 | 2 | 9 | <u> </u> / 132 |
| asthma | 1 | 2 | 9 | <u> </u> / 133 |
| bronchitis | 1 | 2 | 9 | <u> </u> / 134 |
| cirrhosis of the liver | 1 | 2 | 9 | <u> </u> / 135 |
| cancer | 1 | 2 | 9 | <u> </u> / 136 |

IF "YES" TO CANCER, ASK: "In what organ did the cancer originate or do you have leukemia or lymphatic cancer?" _____

69. Who do you feel has primary responsibility for your health? READ RESPONSES.

| | | |
|-------------------------------|-------------------------|----------------------|
| 1 = Doctor | 5 = Yourself | <u> </u> / 137 |
| 2 = Hospital staff | 6 = Some else _____ | |
| 3 = Public health department | Specify | |
| 4 = Other health professional | 9 = DON'T KNOW/NOT SURE | |

70. I'm going to read a list of reasons people sometimes give for not taking steps to promote better health. (Examples: wearing safety belts, exercising, avoiding cigarettes, losing weight, etc.) Please tell me whether any have applied in your case. READ RESPONSES. MARK A RESPONSE IN EACH CATEGORY.

| | <u>No, has never applied</u> | <u>Yes, has applied</u> | |
|---------------------------------|----------------------------------|-----------------------------|----------------------|
| Lack of time | 1 | 2 | <u> </u> / 138 |
| Lack of information | 1 | 2 | <u> </u> / 139 |
| Attitudes of co-workers | 1 | 2 | <u> </u> / 140 |
| Attitudes of family and friends | 1 | 2 | <u> </u> / 141 |
| Cost | 1 | 2 | <u> </u> / 142 |
| Facilities not available | 1 | 2 | <u> </u> / 143 |
| Discomfort or pain | 1 | 2 | <u> </u> / 144 |
| Enjoy the habit | 1 | 2 | <u> </u> / 145 |
| Inconvenience | 1 | 2 | <u> </u> / 146 |
| Other _____ | | | |

71. What is your marital status:

1 = Never married
2 = Married
3 = Separated

4 = Divorced
5 = Widowed

 /
147

72. What is your ethnic background? READ RESPONSES.

1 = White
2 = Spanish American
3 = Native American
4 = Black

5 = Oriental
6 = Other
9 = DON'T KNOW/NOT SURE

 /
148

73. What is your religious preference? READ RESPONSES.

1 = Protestant
2 = Jewish
3 = Catholic
4 = Latter Day Saint (Mormon)
5 = Greek Orthodox

6 = Unitarian
7 = Seventh Day Adventist
8 = Other
9 = No preference

 /
149

74. What is your employment status? READ RESPONSES.

1 = Employed
2 = Temporarily out of work
3 = Homemaker
4 = Retired

5 = Not employed
6 = Unemployed for more than a year
7 = Student
9 = DON'T KNOW/NOT SURE

 /
150

75. Considering all sources of income, how much did you and your family earn last year? READ RESPONSES.

1 = Less than \$5,000
2 = 5,000 to 9,999
3 = 10,000 to 14,999
4 = 15,000 to 19,999
5 = 20,000 to 24,999

6 = 25,000 to 34,999
7 = 35,000 to 49,999
8 = More than \$50,000
9 = DON'T KNOW/NOT SURE

 /
151

76. What is your last name? _____

NOTE TO INTERVIEWER:

SAY: "Thank you very much for your time. The Montana Department of Health appreciates your cooperation and help in this survey."

BE CERTAIN THAT BOTH PARTS OF THE QUESTIONNAIRE ARE IDENTIFIED WITH THE CORRECT TELEPHONE NUMBER.

THOSE RESPONDENTS WHO HAVE QUESTIONS ABOUT HEALTH AND/OR THIS SURVEY ARE WELCOME TO CONTACT THE MONTANA PREVENTIVE HEALTH SERVICES BUREAU IN HELENA AT 449-4740.

Stop _____

APPENDIX B
The "Screener"

N.B. A given "screener" consisted of the first page of this appendix and one of the other six pages. These other six pages are identical except for column "E". The different screeners were used in order to spread the sample over all age/sex categories in a random manner.

MONTANA S I R
October/November 1981

| | | | | | |
|----------------|---|-------------|----|--------------|----|
| Billings | 1 | Great Falls | 8 | Lewistown | 14 |
| Bozeman | 2 | Glasgow | 9 | Missoula | 15 |
| Butte | 3 | Havre | 10 | Paradise | 16 |
| Columbia Falls | 4 | Helena | 11 | Polson | 17 |
| Dillon | 5 | Kalispell | 12 | Shelby | 18 |
| Fairview | 6 | Laurel | 13 | Stevensville | 19 |
| Forsyth | 7 | | | | |

Hello, I'm _____ from Montana Surveys. We're conducting a survey for the Montana Department of Health to help plan programs to meet the needs of people in your community.

First, may I ask your telephone number to verify that I dialed properly?

RECORD NUMBER

I.a. May I speak with an adult 18 years of age or older who lives here?

Yes -- CONTINUE ON TO QUESTION II.
None available -- CONTINUE ON TO I.b.
Refusal -- TERMINATE AND TALLY.

REFUSED

1 2 3 4 5 6 7 8 9 10

I.b. NO ADULT AVAILABLE

1 2 3 4 5 6 7 8 9 10

TALLY AND ASK: When do you expect him/her to be home?

Date _____ Time _____

(IF THIS DATE AND TIME IS NOT WITHIN OUR TIME FRAME, TALLY AND GO ON TO A NEW TELEPHONE NUMBER.)

1 2 3 4 5 6 7 8 9 10

II. (IF A DIFFERENT PERSON IS CALLED TO THE TELEPHONE, GIVE INTRODUCTION AGAIN BEFORE CONTINUING WITH THE FOLLOWING EXPLANATION.)

Before we continue with this survey, we would like you to know that your telephone number was selected at random. Your answers will be kept strictly confidential and will be combined with the responses given by several hundred other residents of Montana.

III. INTERVIEWER: YOU WILL NOW COMPLETE THE RESPONDENT SELECTION ROSTER.

So that I may determine which adult resident is to be interviewed, I would like to make a list of the persons 18 years of age and over who live there as permanent members of your household. Please tell me the first name of each person beginning with the oldest male 18 years or over. (CONTINUE WITH THE NEXT OLDEST MALE, ETC., UNTIL ALL MALES 18 OR OLDER ARE LISTED. THEN LIST ALL FEMALES 18 AND OVER BEGINNING WITH THE OLDEST AND ENDING WITH THE YOUNGEST.)

| A FIRST NAME | B SEX | | C AGE ON <u>LAST</u> BIRTHDAY | D NUMBER IN HOUSEHOLD | E RESPONDENT NUMBER |
|-----------------|----------|--------|-------------------------------------|-----------------------------|---------------------------|
| | MALE | FEMALE | | | |
| 1) | | | | 1 | 1 |
| 2) | | | | 2 | 1 |
| 3) | | | | 3 | 2 |
| 4) | | | | 4 | 2 |
| 5) | | | | 5 | 3 |
| 6) | | | | 6 | 2 |
| 7) | | | | 7+ | 4 |

(ASK B ONLY IF YOU CANNOT DETERMINE SEX.)

- c. What age was _____ on his/her last birthday?
(SAY NAME FOR EACH PERSON LISTED ABOVE AND RECORD IN C.)
- d. CIRCLE NUMBER IN HOUSEHOLD TO DETERMINE RESPONDENT NUMBER.
- e. CIRCLE RESPONDENT NUMBER. GO TO A TO IDENTIFY THE RESPONDENT WHOSE NUMBER IS CIRCLED.

IV. In checking my sample table, I see that I must interview _____.
May I speak with _____? (RESTATE PURPOSE OF STUDY AND CONFIDENTIALITY AS IN THE INTRODUCTION.)

This study will take about twenty minutes. Is this a convenient time for you?

Yes -- CONTINUE

No -- CALL BACK AT _____, _____
DATE TIME

Refused -- TERMINATE AND TALLY

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|

APPENDIX C
"OTHER" Responses

Questions Where Response was "Other" and an

Alternate Response was Given

| <u>Question</u> | <u>Tally</u> | <u>Response</u> |
|-----------------|--------------|--|
| 18. | 12 | "Blood drawing" or "Red Cross blood drawing" |
| | 5 | "At work" |
| | 5 | "At school" |
| | 1 | "Park clinic" |
| | 5 | "Shopping mall" or a named store |
| | 1 | "Health check clinic" |
| | 3 | "Pharmacy" or "Drug store" |
| | 1 | "Courthouse" (Polson respondent) |
| | 1 | "Granite Towers" (Billings respondent) |
| | 2 | "County nurse" (Shelby) |
| | 2 | "Mother" (both nurses) |
| | 2 | "Fair booth" |
| | 1 | "Visiting nurse" (a 91-year old respondent) |
| | 1 | "Blood pressure check machine" |
| | 1 | "Mother-in-law" |
| | 1 | "Son" |
| | 2 | "Friend" |
| | 3 | "At the home of a registered nurse" |
| | 1 | "Fireman" |
| | 1 | "Sister" |
| | 1 | "Husband" |
| | 1 | "Sister-in-law" |
| | 1 | "Rest home where husband is" |
| | 2 | "College health service" |
| | 2 | "Fort Harrison" or "Army Hospital" |
| | 1 | "Family Planning Clinic" |

| <u>Question</u> | <u>Tally</u> | <u>Response</u> |
|-----------------|--------------|--|
| 22. | 2 | "Water pills" |
| | 1 | "Drink moderately" |
| 25. | 1 | "Smoking habit too hard to break" |
| | 1 | "Never began treatment" (stop smoking) |
| 30. | 6 | "Go to the source and solve it" or similar response |
| | 2 | "Get professional help" |
| | 4 | "Work" or "Work extra hard" or "Work like a dog" |
| | 1 | "Wait it out" |
| | 2 | "Read" |
| | 7 | "Eat" |
| | 3 | "Clean house" |
| | 6 | "Do hand work" or "Weave" or "Sew" |
| | 6 | "Listen to music" or "Sing" or "Play the piano" or "Hum a lot" |
| | 3 | "Pound things or use profanity" or "Throw things" |
| | 2 | "Kick the dog" or "Kick the cat" |
| | 6 | "Walk" or "Go for long walks" |
| | 3 | "Go for a drive" |
| | 2 | "Visit friends" |
| | 2 | "Play cards" or "Play solitaire" |
| | 1 | "Relax--throw horseshoes" |
| | 3 | "Get away from the house" or "Go outside" |
| | 3 | "Get by myself" |
| | 2 | "Cry" |
| | 1 | "Walk away" |
| | 1 | "Run or jog" |
| | 1 | "Chew my fingernails" |
| | 1 | "Watch TV" |
| | 1 | "Ride horses" |
| | 1 | "Do something for somebody to keep my mind off of things" |
| | 1 | "Try to keep busy to keep my mind off of things" |

| <u>Question</u> | <u>Tally</u> | <u>Response</u> |
|-----------------|--------------|--|
| 40. | 6 | "Diabetic" |
| | 1 | "Shaklee" |
| | 7 | "Salt free" |
| | 2 | "Low salt" |
| | 2 | "Salt free--fat free" |
| | 1 | "Salt free--low calorie" |
| | 1 | "Low salt and high fiber" |
| | 2 | "For high blood pressure" |
| | 6 | "My own" |
| | 5 | "Weight reduction" |
| | 3 | "Ulcer" or "Bland" or "For stomach trouble" |
| | 1 | "Watch weight, no sugar, no salt" |
| | 3 | "Weight maintenance" |
| | 1 | "Watch the sugar I eat" |
| | 2 | "1,000 calorie diet" |
| | 1 | "800 calorie" |
| | 2 | "Weight watchers" |
| | 1 | "Dexatrim" |
| | 1 | "TOPS" |
| | 1 | "Overeaters Anonymous" |
| | 1 | "Pregnant" (others were pregnant but didn't answer this) |
| | 2 | "Low cholestrol" |
| | 6 | "Watch calories" or "Calorie count" |
| | 1 | "Low sugar" |
| | 1 | "Low carbohydrate" |
| | 2 | "Gall bladder" |
| | 1 | "For hypoglycemia" |
| | 1 | "Nursing baby--3000 calories" |
| | 1 | "One week diet from M.D.--mainly fruit and vegetables" |
| | 1 | "Low fat--low cholestrol" |
| | 1 | "High protein" |
| | 1 | "Prevent weight gain over 10 lbs." |

| <u>Question</u> | <u>Tally</u> | <u>Response</u> |
|-----------------|--------------|--|
| 41. | 5 | "My wife" |
| | 1 | "My son" |
| | 2 | "My mother" |
| | 5 | "Family" |
| | 6 | "Myself" or "Common sense" |
| | 8 | "Friends" |
| | 1 | "Friends and family" |
| | 1 | "My daughter who owns a health food store in Seattle" |
| | 1 | "I'm a nurse--I just know" |
| | 1 | "It's my job" (a nutritionist) |
| | 3 | Food packages" |
| | 1 | "Grocery stores and government publications" |
| | 3 | "School" |
| | 2 | "TOPS" |
| | 3 | "Weight Watchers" |
| | 1 | "Shaklee" |
| | 1 | "Health club" |
| | 1 | "Mother-in-law" |
| | 1 | "My sister--a home economics teacher" |
| | 1 | "Cookbooks" |
| | 1 | "County Extension Office" |
| | 3 | "Other people" |
| | 1 | "Church pamphlets" |
| | 1 | "Overeaters Anonymous" |
| | 1 | "Center for Science of Public Interest, Sarah Sloan and the La Leche League" |
| 55. | 1 | "Exercise" |
| 57. | 1 | "Books" |
| | 1 | "Magazines and friends" |
| | 3 | "Magazines" |
| | 1 | "Life insurance salesman" |

| <u>Question</u> | <u>Tally</u> | <u>Response</u> |
|-----------------|--------------|---|
| 57. | 1 | "Magazine called <u>Forecast</u> " |
| | 1 | "Mother-in-law" |
| | 1 | "Newspapers, magazines, the library" |
| 68. | 5 | "Skin" |
| | 1 | "Throat" |
| | 1 | "Ovary" |
| | 2 | "Uterus" |
| | 3 | "Cervix" |
| | 1 | "Female organs" |
| | 1 | "Pelvis" |
| | 1 | "Lip" |
| | 1 | "Hodgekin's Disease" |
| | 1 | "Shoulder, lymphatic" |
| | 1 | "Bladder and two skin cancers" |
| | 1 | "Prostate" |
| | 1 | "Breast" |
| 69. | 3 | "My wife" |
| | 5 | "The Lord" or "God" |
| | 1 | "Mother" |
| | 1 | "My father" (a 31-year old male with sixth grade education) |
| | 1 | "My parents" (a 29-year old married female) |
| | 1 | "My sons" |
| | 1 | "My niece" |
| | 1 | "My daughter" |
| | 1 | "My husband" |
| | 1 | "Hospice ladies" (Helena) |
| 70. | 11 | "Laziness" |
| | 1 | "Laziness and I believe I'm immortal" |
| | 1 | "Too damned lazy and had no need for it" |

| <u>Question</u> | <u>Tally</u> | <u>Response</u> |
|-----------------|--------------|--|
| 70. | 1 | "Laziness and lack of discipline" |
| | 1 | "Too much work" |
| | 1 | "Too tired from my job" |
| | 1 | "Didn't want to" |
| | 1 | "Age" |
| | 1 | "Gluttony" |
| | 1 | "Lack of baby-sitting facilities" |
| | 1 | "Apathy" |
| | 1 | "Not concerned about the consequences" |
| | 1 | "Didn't want to hear the bad news" |
| | 1 | "Don't believe it is really harmful" |
| | 1 | "I rebel at being told to do certain things (a diabetic)" |

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